USSR

UDC 616.981.42

ARSHAKUNI, G. A., MELIKYAN, V. G., SARKISYAN, G. Ye., and MARDZHANYAN, D. C.,
Armenian Scientific Research Institute of Animal Husbandry and Veterinary
Science

"Cases of Isolation of B. melitensis from Cattle"

Abstract: An investigation of 81 cultures of Brucella isolated from aborted
fetuses of cattle and from slaughtered cows in the Armenian SSR indicated
that two cultures from fetuses and two cultures from slaughtered cows, respec-
tively, belonged to the species B. melitensis, while 77 of the cultures were
of the species B. abortus bovis. The results showed that occasional infection
of cattle with B. melitensis is possible in the Armenian SSR.

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SARKISYAN, K.

chemical plant director

So: JPRS 59165
31 May 1973

CHEMICAL INDUSTRY PRODUCTION REPORTED

[Article: "This is How The Chemists Work"; Ashkhabad, Turkmenskaya Iskra, Russian, 11 March 1973, p.1]

The chemical industry workers of Turkmenistan have obligated themselves in the third year of the five-year plan to accelerate the technical retooling of existing production facilities and additionally provide the plan with 12,000 tons of superphosphate, 1,000 tons of sulfuric acid, 260,000 rubles of lump sulfur, 100,000 rubles of sodium sulfate, and assimilate five new types of items from plastic.

Chardzhou Superphosphate Plant

The collective of the Chardzhou Superphosphate Plant imeni V. I. Lenin has obligated itself to provide an additional 300,000 rubles of products above the plan during the current year. During the first 2 months, nearly 60,000 rubles worth of above-plan products were forwarded to consumers.

"In setting the goals for the third year of the five-year plan," commented plant director A. Lar'yanovskiy, "we took the existing production reserves into consideration. The further improvement in technological processes, strengthening of labor discipline, and raising the technical knowledge of the people were at the center of attention."

Competition for advance fulfillment of the plan became widespread at the plant. Each work team and shift formulated and assumed specific obligations. A persistent struggle is going on in all of the shops to achieve the highest productive labor at each work place. The collective of the sulfuric acid shop is setting the pace in the competition. The oxygen shop is working rhythmically. The ammoniated superphosphate shop has produced a considerable amount of above-plan products. The polyethylene film shop is picking up the pace. It is successfully assimilating the production of polyethylene bags. The new product has been highly rated by its users.

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Gaurdak Sulfur Combine

The Gaurdak Sulfur Combine has set its 1973 obligation at 20,000 tons of sulfur above the plan. Much has already been done to implement the planned goals. The bimonthly plan was carried out ahead of schedule. More than 4,000 tons of lump sulfur were produced for obligation require- ments.

Considerable attention is given at the enterprise to expanding the sulfur extraction front. The mining work plan was overfulfilled. Nearly 150,000 cubic meters of rock were carried out to the tailings heap. High indexes in the competition for an advance fulfillment of the third year tanks of the five-year plan are being reached by the machine workers of the Northern quarry supervised by I. Krivokolyasko. Tens of thousands of tons of rock have been carried out by them since the beginning of the year above the plan requirements.

"The achieved successes are the result of the technical retooling of production," states the combine's chief engineer, A. Krasnokutov. "New and more powerful excavators are now in use at the quarries. They made it possible to raise labor productivity. Drilling equipment is being mor- demized. Slant drilling machine tools are being assimilated. The re- moval of nonbearing stone is being done at the place of extraction so as to raise ore quality."

Many technical innovations have been introduced at the concentra- tion factory. The large and intermediate ore crushing shops have been modernized. Advanced technology is used to obtain sulfur concentrate. Further improvements to underground sulfur smelting is being done in co- operation with scientists. This is a most important lever to raise pro- duction efficiency.

Competition to fulfill and overfulfill shift tasks and to provide above-plan products is becoming widespread among the work teams. The combine's collective is filled with the desire to take on new goals.

Nebit-Dag Iodobromite Plant

High labor enthusiasm reigns in the shops of the iodobromite plant. The collective is successfully competing for an advance fulfillment of the five-year plan's third year plan and the assumed obligations — to provide several additional tons of commercial iodine. The plan for the first 2 months has been more than covered. The chemists have produced a large amount of above-plan products.

The plant's director, K. Sarkisyan, stated that this year, the col- lective is supposed to increase production output by 30 percent, as com- pared with the previous year, and to do so without increasing the number of industrial-production personnel. This obligates them to constantly seek unused reserves. Some have already been put into production. A particularly large gain was obtained from the use of a powerful press.

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Acc. Nr:
AP0053432   Abstracting Service: Ref. Code:
CHEMICAL ABST.   5-70   4R0366

110738r Addition of trichloroacetonitrile and trichloroacet-
amide to conjugated enynes and dienes. Badanyan, Sh. O.;
Sarkisyan, K. L.; Gevorkyan, A. A. (Inst. Org. Khim., Erevan,
USSR). Zh. Org. Khim. 1970, 6(2), 397 (Russ). The addn. of
Cl_3CCN to $H_2C:CMeC:CH$ gave $HCCl:C:CMeCH_2CCl_2CN$.
The addn. of Cl_3CCN or Cl_3CCONH_2 to $H_2C:CMeCH:CH_2$
gave $ClCH_2CH:CMeCH_2CCl_2X$ (X is CN or $CONH_2$). CPJR

REEL/FRAME
19830457

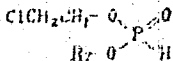7

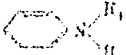USSR   UDC: 547.26'118.07

SARKISYAN, L. A., KHASKIN, A. N., ZAVLIN, P. M., AYRAPETYAN, S. G., AYVAZYAN, M. K.,
Leningrad Institute of Motion Picture Engineers

"A Method of Producing Acid Esters of β-Chloroethylphosphorous Acid"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 28,
1970, Soviet Patent No 280474, filed 18 Mar 69, p 25

Abstract: This Author's Certificate introduces: 1. A method of producing acid
esters of β-chloroethylphosphorous acid of the general formula

$$ClCH_2CH_2-O \diagdown P \diagup^O_H \diagup R_1 O \diagup$$

where R is naphthyl, $\langle \rangle N \diagdown^{R_1}_{R_2}$ $CH_2CH_2N \diagdown^{R_1}_{R_2}$, R$_1$ is an alkyl, oxyalkyl, diphenylmethyl,

aryl, R$_2$ is H, an alkyl, oxyalkyl. As a distinguishing feature of the patent, amino-
phenyl, alkanolamine or hydroxynaphthaline is interacted with ehtyleneglycolphos-
phorous acid chloride in the presence of hydrogen chloride with subsequent isolation
of the goal product by conventional methods. 2. A modification of this method in
which the process is carried out in an organic solvent such as ether. 3. A modifi-
cation of this method in which the process is carried out with heating to [...].
1/2

UDC: 681.3.06:51

USSR

KUDRYASHOVA, O. N., SARKISYAN, N. A., TKACH, V. F.

"Organization of an Input-Output System With Inquiry and Response Stations and a VNIIEM-3 Computer for Real-Time Collection of Production Data"

V sb. Primeneniye vychisl. tekhn. v elektrotekhn. prom-sti (Use of Computer Technology in the Electrical Engineering Industry—collection of works), Moscow, 1971, pp 289-294 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V844)

Translation: The authors discuss an input-output system with inquiry-response stations. The system is a software element in a system for collection of production data in a slab mill. The described system organizes bilateral communications between the VNIIEM-3 control computer and telegraph equipment installed in the production line, and implements series-parallel reception of messages and output of information in the VNIIEM-3 computer system in amounts up to eight pieces, as well as quasisimultaneous operation of the computer and an external device. V. Mikheyev.

1/1

1/2   035   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--EFFECT OF THE ANISOTROPY IN THE MECHANICAL PROPERTIES OF GLASS
   FIBER REINFORCED MATERIALS OF SVAM TYPE ON THEIR HEATING UNDER AXIAL
AUTHOR--SARKISYAN, N.YE.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK ARMIANSKOI SSR, IZVESTIIA, MEKHANIKA, VOL. 23, NO.
   2, 1970, P. 63-72
DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--ANISOTROPY, GLASS FIBER, REINFORCED PLASTIC, EPOXY RESIN,
   PHENOLIC RESIN, CYCLIC LOAD TEST, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0059   STEP NO--UR/0430/70/023/002/0063/0072

CIRC ACCESSION NO--AP0132354
                           UNCLASSIFIED

CIRC ACCESSION NO--AP0132354   UNCLASSIFIED   PROCESSING DATE--04DEC70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL STUDY OF THERMAL
    EFFECTS IN SPECIMENS OF EPOXY PHENOL AND BUTVAR PHENOL GLASS FIBER
    REINFORCED ANISOTROPIC MATERIALS SUBJECTED TO AXIAL CYCLIC LOADS AT 1200
    CYCLE-MIN. THE TEMPERATURE VARIATIONS DURING LOADING ARE MEASURED IN 5
    SPECIMENS WITH ANISOTROPIC MECHANICAL PROPERTIES DUE TO DIFFERENT FIBER
    ORIENTATIONS. A RELATION IS ESTABLISHED BETWEEN THE ANISOTROPY OF
    SPECIMENS AND THEIR HEATING UNDER LOADS. IT IS ALSO FOUND THAT THE
    HEATING OF SPECIMENS UNDER LOADS HAS PRACTICALLY NO EFFECT ON THEIR
    BREAKDOWN TEMPERATURE WHILE THE LATTER DEPENDS SUBSTANTIALLY ON
    ANISOTROPY.   FACILITY: AKADEMIIA NAUK ARMIANSKOI SSR, INSTITUT
    MATEMATIKI I MEKHANIKI, YEREVAN, ARMENIAN SSR.

UNCLASSIFIED

TITLE--SYNTHESIS OF LACTONES. VIII. REACTIONS OF
  ALPHA,SUBSTITUTED,DELTA,HYDROXY,GAMMA,CAPROLACTONES -U-

AUTHOR-(05)-ZALINYAN, M.G., ARUTYUNYAN, V.S., SARKISYAN, O.A., KAZARYAN,
  SH.A., DANGYAN, M.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6 (4), 860-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, LACTONE, DEHYDRATION, CHLORINATED ORGANIC
  COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2084   STEP NO--UR/0366/70/006/004/0860/0862

CIRC ACCESSION NO--AP0125671
                        UNCLASSIFIED

2/2   008   UNCLASSIFIED   PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125671
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEHYDRATION OF
  ALPHA,(R,SUBSTITUTED),DELTA, HYDROXY,GAMMA,CAPROLACTONES (I) R EQUALS
  ET, PR, BU, ISO-BU, ISO-AMYL) WITH HPO SUB2 GAVE
  ALPHA,(R,SUBSTITUTED),GAMMA,VINYLBUTYROLACTONES.   THE REPLACEMENT OF
  THE OH GROUP OF I BY CL GAVE DELTA,CHLORO ANALOGS OF I WHICH REACTED
  WITH ETONA TO GIVE DELTA,ETHOXY ANALOGS OF I.   FACILITY: EREVAN.
  GOS. UNIV., EREVAN, USSR.

UNCLASSIFIED

1/2   014   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--SYNTHESIS OF LACTONES. VII. SELECTIVE REDUCTION OF
  ACETYLBUTYROLACTONES BY ALUMINUM ISOPROPYLATE -U-
AUTHOR-(05)-ARUTYUNYAN, V.S., SARKISYAN, O.A., KAZARYAN, SH.A., ZALINYAN,
  M.G., DANGYAN, M.T.
COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 856-60

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, LACTONE, CHEMICAL REDUCTION, ORGANOALUMINUM
  COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2083   STEP NO--UR/0366/70/006/004/0856/0860

CIRC ACCESSION NO--AP0125670
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0125670
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SELECTIVE REDN. OF ALPHA, (R
SUBSTITUTED),GAMMA,ACETYLBUTYROLACTONES (R EQUALS ET, PR, ISO-PR, BU,
ISO-BU, OSOAMYL) WITH (ISO-PRO) SUB3 AL (I) GAVE ALPHA,(R
SUBSTITUTED),GAMMA, (ALPHA,HYDROXYETHYL)BUTYROLACTONES. THE REDN. OF
BETA,ACETYL,BETA,CARBETHOXYBURYROLACTONE WITH I GAVE
BETA,(ALPHA,PROPOXYETHYL),BETA,CARBETHOXYBUTYROLACTONE WHICH WAS
DECARBOXYLATED TO BETA,(ALPHA,PROPOXYETHYL)BUTYROLACTONE (II). THE
REDN. OF BETA,ACETYLBUTYROLACTONE WITH I ALSO GAVE II. THE REDN. OF
ALPHA,(3,OXOBUTYL)BURYROLACTONE GAVE
ALPHA,(3,HYDROXYBUTYL)BUTYROLACTONE. ALPHA,ACETYLBUTYRO,LACTONES COULD
NOT BE REDUCED IN THIS WAY.   FACILITY: EREVAN. GOS. UNIV.,
EREVAN, USSR.

TITLE--STUDY OF THE TERNARY SOLID SOLUTIONS NI SUB3 (FE, V) -U-

AUTHOR--SARKISYAN, R.S., SELISSKY, YA.P.

COUNTRY OF INFO--USSR

SOURCE--UKRAIN. FIZ. ZHUR. JAN., 1970, 15, (1), 127-129

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SOLID SOLUTION, ORDERED ALLOY ELASTIC MODULUS, ELECTRIC
  CONDUCTIVITY MEASUREMENT, ALLOY COMPOSITION, NICKEL ALLOY, IRON
  CONTAINING ALLOY, VANADIUM CONTAINING ALLOY, ALLOY STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1240   STEP NO--UR/0185/70/015/001/0127/0129

CIRC ACCESSION NO--AP0107680
                          UNCLASSIFIED

2/2   019
CIRC ACCESSION NO--AP0107680
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE ORDERING CHARACTERISTICS OF
SOLID SOLUTIONS OF THE NI SUB3 (FE, V) TYPE WERE STUDIED BY ELECTRICAL
RESISTANCE AND ELASTIC MODULUS MEASUREMENTS OVER A WIDE TEMP. RANGE
(0-600DEGREESC.) AN ORDERED STRUCTURE OF THE NI SUB3 FE TYPE PERSISTED
IN ALLOYS CONTG. UP TO 13 AT. PERCENT V.   AS THE V ROUNDED BY NI ATOMS
WAS SUPPLEMENTED BY ANOTHER STRUCTURE IN WHICH THE V ATOMS WERE
SURROUNDED BY NI, AT LEAST WITHIN THE FIRST COORDINATION SPHERE.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--11SEP70

172   019
TITLE--A FREQUENCY SELECTION AMPLIFIER -U-

AUTHOR--BROVMAN, YA.S., SARKISYAN, S.A.

COUNTRY OF INFO--USSR

SOURCE--PATENT NO 262984
REFERENCE--MOSCOW, OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, NO
DATE PUBLISHED--04FEB70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., METHODS AND EQUIPMENT

TOPIC TAGS--PATENT, ELECTRIC MEASURING INSTRUMENT, FREQUENCY SELECTION,
ELECTRONIC AMPLIFIER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1111   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0112233
ZZZZZZZZZZZZ   UNCLASSIFIED

CIRC ACCESSION NO--AA0112233
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE
 INTRODUCES A FREQUENCY SELECTION AMPLIFIER WHICH MAY BE USED IN THE
 MEASUREMENT SYSTEMS OF BALANCING MACHINE TOOLS. THE UNIT CONTAINS
 INTEGRATORS, AN INVERTER AND A COMPARISON CIRCUIT.   IT DIFFERS BECAUSE
 TO AUTOMATE THE PROCESS OF BALANCING ROTORS AND REGULATING THE Q OF THE
 AMPLIFIER, ONE OF ITS INTEGRATORS IS SHUNTED BY A NEGATIVE FEEDBACK
 CIRCUIT BASED ON TWO RESISTORS WITH A RESISTANCE BOX CONNECTED BETWEEN
 THEM. THE RESISTANCE BOX IS CONNECTED TO THE COLLECTOR OF THE OUTPUT
 TRANSISTOR IN THE COMPARISON CIRCUIT, WHILE THE INTEGRATOR IS CONNECTED
 THROUGH A DIODE AND A FILTER RESISTOR IN PARALLEL WITH THE REFERENCE
 VOLTAGE SOURCE TO THE BASE OF THE INPUT TRANSISTOR OF THIS SAME
 COMPARISON CIRCUIT.

UNCLASSIFIED

USSR $\mathcal{S}$ UDC 621.375.126

BROVMAN, Ya. S., SARKISYAN, S. A., TransCaucasus Affiliate of the Experimental
Scientific Research Institute of Metal-Cutting Machine Tools

"A Frequency Selection Amplifier"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 7, 4 Feb 70, p 46, patent No 262984, filed 7 Aug 68

Translation: This Author's Certificate introduces a frequency selection
amplifier which may be used in the measurement systems of balancing machine
tools. The unit contains integrators, an inverter and a comparison circuit.
It differs because to automate the process of balancing rotors and regulating
the Q of the amplifier, one of its integrators is shunted by a negative feed-
back circuit based on two resistors with a resistance box connected between
them. The resistance box is connected to the collector of the output tran-
sistor in the comparison circuit, while the integrator is connected through
a diode and a filter resistor in parallel with the reference voltage source
to the base of the input transistor of this same comparison circuit.

1/1

USSR

UDC 612,826

SARKISYAN, S. M., and AZIZYAN, A. A., Armenian Scientific Research Station of Sericulture, Ministry of Agriculture, Armenian SSR

"Transmission of the Learning Effect to the Progeny"

Abstract: It is considered probable that RNA, DNA and proteins participate in the retention of a memory record, which persists under the effect of surroundings. The possibility of memory transfer to the next generation was studied in mulberry silkworms. Various species differ in the form of their curled-up cocoons. Most of the cocoon have two axis, a long one and a short one. The long axis can be used to characterize the degree of extension of the cocoon. Caterpillars of the mulberry silkworm were grown in cells in which they had to curl up. It was found that, as a result of this, the caterpillars were considerably deformed. The descendants of the silkworm from these deformed caterpillars were found to be more deformed than the control species. In a second series of tests parthenogenic caterpillars were used. In this case the deformed and the normal (control) species were identical in their genotype when they were mated with the same male. With all

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USSR

SARKISYAN, S. M., and AZIZYAN, A. A., Dokaldy Akademii Nauk Armyanskoy SSR, Vol 51, No 5, Dec 70, pp 309-312

three varieties studied, the degree of extension of the cocoons had been enhanced in the descendants from deformed species. The conclusion is drawn (from this and earlier work) that there is transmission of the learning effect from one generation to the next one. This transmission takes place even when only the mother has been taught.

2/2

1/2   026   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--SUPPLEMENTAL HYDROFINING OF VISCOUS AND HIGHLY VISCOUS OILS FROM
  BAKU PETROLEUMS -U-
AUTHOR-(03)-KULIYEV, R.SH., SAMEDOVA, F.I., SARKISYAN, V.M.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5), 22-3

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--PETROLEUM DEPOSIT, GEOGRAPHIC LOCATION, FURFURAL,
  HYDROREFINING, CATALYST, ALUMINUM OXIDE, COBALT, MOLYBDENUM, PETROLEUM
  DEASPHALTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1948   STEP NO--UR/0318/70/000/005/0022/0023

CIRC ACCESSION NO--AP0133792
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0133792   UNCLASSIFIED   PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OILS, DEASPHALTED AND REFINED
WITH FURFURAL, WERE HYDROFINED ON COM. AL SUB2 O SUB3,CO,MO CATALYST AT
SPACE VELOCITY 0.5 HR PRIME NEGATIVE1 AND 50 ATM. HYDROFINING AT
350DEGREES GAVE GOOD RESULTS, BUT AT 400DEGREES, A GREAT DECREASE OF
VISCOSITY, D., AND FLASH TEMP. OF THE HYDROGENATE WAS PRODUCED.
SUPPLEMENTAL TREATMENT BY HYDROFINING YIELDED OILS OF HIGHER QUALITY
THAN BY CONTACT REFINING.

UNCLASSIFIED

USSR

UDC 612.76+612.013.7]-053.7

SARKISYANTS, E. E., DOSKIN, V. A., MINNIBAYEV, T. Sh., and MARKIN, A. A.,
Chair of Hygiene of Children and Adolescents, First Moscow Medical Institute
imeni I. M. Sechenov

"Motor Activity and Daily Energy Expenditure of Students"

Abstract: Questionnaires and time-and-motion studies were used to analyze the
daily routine of over 600 young men and women attending the First Moscow
Medical Institute and Moscow Energy Institute. The students were relatively
inactive 83% of the time, even during their leisure hours, which they spent
mostly reading, watching television, or going to the movies. Only about
7% of all the students engaged in sports of any kind. The women were even less
active than the men, the energy expenditure averaging 2290 and 3536 kcal,
respectively. The students housed in dormitories tended to be more passive
than those living at home. All students, male and female, became more active
on Sundays possibly because the body's natural need of exercise is curbed on
school days.

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Acc. Nr. *AP0046180* Abstracting Service: 5/70   Ref. Code
— CHEMICAL ABST.   *UR0065*

91907b Alkaline removal of sulfur compounds and carbon dioxide from pyrolysis gas. Guseinova, Z. D.; Kostin, V. V.; Savel'ev, Yu. V.; Sarkisyants, G. I. (USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(1), 31-2 (Russ). Pyrolysis gas contg. H 10.0, CH_4 25.2, C_2H_6 25.0, propylene 18.0, C_2H_4 2.4, C_4 and higher hydrocarbons 9.0%, H_2S ≤1500, org. S compds. 20 mg/m^3, and CO_2 300 ppm was fed into a tray column 7 m high and 378 mm in diam. having 10 perforated trays. H_2S and part of the CO_2 were removed with 1.4-1.7 l. 2-4% NaOH soln./m^3 at 40°. After leaving the top of the column, the gas was heated to 80° and fed into a similar packed column for complete removal of H_2S and CO_2 with 10 l. 5-8% NaOH soln./hr at 60-80°. The alk. solns. were changed after operating 1300-1500 hr. After purification, the pyrolysis gas was cooled and C_4 and higher hydrocarbons were sepd. The amts. of CO_2, H_2S, and org. S compds. were reduced to 0 ppm, traces, and 0.6 mg S/m^3, resp. On decreasing the amt. of circulating alk. soln. to 0.7 l./m^3 gas, the amts. of CO_2, H_2S, and org. S compds. were decreased to 18 ppm, 0.1 mg/m^3, and 1.6 mg S/m^3, resp. The polymn. was greatly decreased, excluding periodic cleaning of the app. The process is shown graphically.   GGJR

REEL/FRAME
1978125'7

USSR

UDC 621.357.7.035.2;669.587

TYRINA, L. M., SARKIS'YANTS, N. A., and SHLYGIN, A. I.

"The Rate of Electroprecipitation and Electrodeposition Reactions on a Zinc Electrode"

English Version Above. Topic Books from the Dal'nevost University, Vlad-ivostok, 1972, pp 75-78 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L302 by V. V. Grinina)

Translation: As an example of the reaction of electroprecipitation and electrosolution of zinc in $ZnSO_4$ solutions, a study was made of the velocity of the electrochemical reactions in the metal ion systems in solution. A study was carried out using methods of stationary and rapid method stripping polarization curves. It is probable that during an increase in the polarization during the processes of electrodeposition and electrosolution of zinc a change in the limiting rate of the steps occurred.

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USSR   UDC 519.281

SARMANOV, O. V.

"Testing Hypotheses Concerning Parameters of Normal Correlation"

Tr. Mat. In-ta. AN SSSR, [Works of the Mathematics Institute of Academy of Sciences USSR], 1970, Vol 111, pp 258-262, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V158 by the author).

Translation: Formulas are presented for errors of the first and second kind in the most powerful criterion for checking simple hypotheses concerning the parameters of normal correlation in the form of integrals of Bessel functions of an imaginary argument, under the condition that in both of the hypotheses tested the means are identical. The following criterion is suggested, which is independent of the means:

$$-\frac{1}{2}\sum_{k=1}^{n}\left\{\frac{(x_{2h}-x_{2h-1})^2}{2\sigma_{2x}^2}+\frac{(y_{2k}-y_{1h-1})^2}{2\sigma_{2y}^2}-\right.$$
$$\left.-r_2\frac{(x_{2h}-x_{2h-1})}{\sigma_{2k}}\frac{(y_{1k}-y_{1k-1})}{\sigma_{2y}}\right\}\frac{1}{1-r_2^2}+$$

$$+\frac{1}{2}\sum_{k=1}^{n}\left\{\frac{(x_{1h}-x_{1h-1})^2}{2\sigma_{1x}^2}+\frac{(y_{1k}-y_{1h-1})^2}{2\sigma_{1y}^2}-\right.$$
$$\left.-r_1\frac{(x_{2h}-x_{1h-1})}{\sigma_{1x}}\frac{(y_{2k}-y_{2h-1})}{\sigma_{1y}}\right\}\frac{1}{1-r_1^2} \geqslant L,$$

(1)

1/2

where $\{x_j, y_j\}$, $j = 1, 2, \ldots, 2n$, are the results of $2n$ independent observations of the two random quantities related by the normal correlation. Hypothesis H_i is that Mx_k, My_k are arbitrary, $Dx_k = \sigma_{ix}^2$, $Dy_k = \sigma_{iy}^2$, $R(x_k, y_k) = r_i$, $i = 1, 2$. Criterion (1) has the same first and second type errors as the more powerful criterion for hypotheses with zero means and with half the number of observations.

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USSR

UDC: 539.37

GULYAYEV, A. P., and SARMANOVA, L. M., Moscow

"Effect of Carbon Content on the Plasticity of High-Speed Steel at High Temperatures"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, no 6, Nov-Dec 70, pp 140-142

Abstract: The objective of the study was high-temperature plasticity of high-speed steel with various carbon contents. According to its content of alloying elements, the steel involved in the experiment was in line with R18 steel (0.23% Mn; 0.12% Si; 3.90% Cr; 17.76% W; 1.13% V; 0.15 Mo; 0.4% Ni; 0.13% S; and 0.11% P. The carbon contents in the specific melts were 0.05%; 0.20%; 0.37%; 0.55%; 0.74%. The tests have shown that the normal increase in plasticity with an increase in temperature is disturbed in the presence of phase transformations. The narrower the phase-transformation ranges, the more pronounced the changes in plasticity. Dissolution of the excess phase leads to a reduction in plasticity; this reduction is greater with two metallic solid solutions α and γ. High plasticity (superplasticity) was observed at about 800°C, the maximum temperature ever found for an alpha-solid solution for alloys with eutectoid transformations at 820-870°C.

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USSR

SARNAVSKIY, N. M., AVRUTIS, M. G., DINER, I. G., Kiev

"Manufacture of Combined Parts of Hard Alloy Cutting Punches by the Electric Spark Method Using Chemical Nickel Plating"

Kishinev, Elektronnaya Obrabotka Materialov, No 3, 1970, pp 91-92

Abstract: At the Kiev Relay and Automation and Equipment Plant, a special hard alloy equipment section has been set up. Cutting dyes and matrices are being manufactured by chemical nickel plating, which has completely replaced the old method combining direct and inverse copying. Two steel copies are made by the chemical nickel plating method together. One of these is used to cut a layered electrode of AVM (tungsten plus copper plus nickel alloy for working by the inverse dye copying method. The second model is coated with a layer of chemical nickel. The nickel covers the surface of the part in an even layer. This second model is used as a guide in cutting the matrix. By selecting the thickness of the nickel layer applied and the cutting modes, any even clearance or interference can be produced 1/1 between the matrix and dye.

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USSR

UDC 669.15'292'293;295-194.2

SHCHERBAKOVA, V. S., SARRAK, V. I., LIFSHITS, L. S., and GRINBERG, N. A.,
All-Union Scientific Research Institute for Construction of Trunk Pipelines
and Central Scientific Research Institute of Ferrous Metallurgy imeni I. P.
Bardin

"Properties and Nature of Hardening Low-Alloy Steel Containing Small Quantities
of Niobium, Vanadium, and Titanium"

Moscow, Stal', No 6, Jun 71, pp 538-542

Abstract: Kinetics of niobium carbonitride separation in low-alloy ferritic
steel containing 0.03% Nb, the role of the microstructure and dispersion
hardening in developing properties, and the effect of rolling and normaliza-
tion processes on properties of steel micro-alloyed only by niobium were
investigated. It was found that the low-alloy steel containing 0.2% C, 1.15-
1.4% Mn, and approximately 0.05% Nb begins to harden by aging in 2-4 hrs at
500°C as a result of separation of carbides, nitrides, and carbonitrides of
niobium (phase NbC). The separation of this phase in austenite has little
effect in changing the properties of steel with niobium, but a separation in
ferrite promotes hardening. The developing embrittlement can be avoided by
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USSR

SHCHERBAKOVA, V. S., et al., Stal', No 6, Jun 71, pp 538-542

rolling and normalization control. By the most effective alloying (Nb + V or Nb + V + Ti), a high complex of strength and plasticity properties can be obtained. The cold brittleness threshold of steel in the hot-rolled condition can be lowered by changing the rolling method. Four illustrations, four tables, nineteen bibliographic references.

1/2   038   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--EFFECT OF THE METHOD OF HARDENING ON THE RUPTURE RESISTANCE OF
   STEEL IN THE PRESENCE OF A SURFACE STRESS RAISER -U-
AUTHOR-(04)-BERESNEV, G.A., KLEYNER, L.M., SARRAK, V.I., ENTIN, R.I.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 427-428

DATE PUBLISHED----FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--STRESS CONCENTRATION, ALLOY STEEL, RUPTURE STRENGTH, AGE
   HARDENING, DISPERSION HARDENING, BRITTLE FRACTURE, TENSILE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0346   STEP NO--UR/0126/70/029/002/0427/0428

CIRC ACCESSION NO--AP0129578
                         UNCLASSIFIED

2/2   038
CIRC ACCESSION NO--AP0129578
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE EFFECT OF THE METHOD OF
HARDENING ON THE RUPTURE RESISTANCE OF A NUMBER OF HIGH STRENGTH ALLOY
STEELS IN THE PRESENCE OF A SURFACE CRACK (STRESS RAISER) WAS STUDIED.
HARDENING METHODS EMPLOYED INCLUDED: INCREASING THE C CONTENT, STRAIN
AGEING, AND DISPERSION HARDENING.   THE RESULTS CONFIRMED THAT THERE WAS
NO UNAMBIGUOUS RELATIONSHIPS BETWEEN THE NOMINAL UTS ADN THE RESISTANCE
TO BRITTLE FRACTURE (IN THE SENSE OF SENSITIVITY TO A SURFACE CRACK):
THE RESISTANCE TO BRITTLE FRACTURE DEPENDED ESSENTIALLY ON THE METHOD
EMPLOYED TO INCREASE THE STRENGTH AND HARDNESS OF THE MATERIAL.

1/2   023   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--HETEROGENEOUS DISTRIBUTION OF INTERNAL STRESSES AND THE BRITTLE
FRACTURE TENDENCY OF STEEL -U-

AUTHOR--SARRAK, V.I., SHUBIN, V.N., ENTIN, R.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1) 143-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--BRITTLE FRACTURE, CHROMIUM STEEL, MANGANESE STEEL, ALLOY
DESIGNATION, LOW ALLOY STEEL, INTERNAL STRESS, IRON ALLOY, GRAIN
BOUNDARY/(U)20KHG CHROMIUM MANGANESE STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0020   STEP NO--UR/0126/70/029/001/0143/0149

CIRC ACCESSION NO--AP0105119
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0105119   UNCLASSIFIED   PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   IN VIEW OF THE STRONG DEPENDENCE OF THE NATURE OF FRACTURE ON THE STRUCTURAL STATE OF THE METAL, THE DETN. OF THE HETEROGENEITY OF INTERNAL STRESSES FOR CONCRETE STRUCTURES CHARACTERIZED BY DIFFERENT RESISTANCE TO BRITTLE FRACTURE IS OF INTEREST.   THE PRESENT INVESTIGATION OF FE AND STEEL 20KHG IN VARIOUS STRUCTURAL STATES SHOWED THAT RELAXATION TESTS ARE CAPABLE OF PROVIDING AN IDEA AS TO THE DEGREE OF LOCAL CONCN. OF STRESSES DURING LOADING. THE LEVEL OF LOCAL INTERNAL STRESSES UNDER LOAD INCREASES WITH INCREASED GRAIN SIZE AND THE HETEROGENEITY OF THE STRUCTURE.   THE CHANGE IN THE STATE OF THE GRAIN BOUNDARIES EXERTS NO EFFECT ON THE DEVELOPMENT OF HETEROGENEITY OF STRESSES, AND IT CAN PRODUCE AN INCREASE IN THE TENDENCY TOWARDS BRITTLE FRACTURE AS A RESULT OF DECREASED EFFECTIVE ENERGY OF THE FRACTURE SURFACE.

UNCLASSIFIED

USSR

VOLKOV, N. I., ZATSIORSKIY, V. M., KRYLATYKH, Yu. G., MAKSIMOV, N. M.,
NEVERKOVICH, S. D., SARSANIYA, S. K., CHEREMISINOV, V. N., and SHIRKOVETS,
Ye. A., State Order of Lenin Central Institute of Physical Culture

"Physiological Characteristics of Repeated Exercise Done at Different Heart
Rates"

Abstract: Lung ventilation, oxygen consumption, and release of "excess" CO_2
were measured in 3 skilled cyclists after repeated exertions on a bicycle
ergometer with different lengths of work and rest periods. Each subject per-
formed 5 variations of the experiment at 3 heart rates - 150, 165, and 180
beats/min. The periods of exertion were 1.5, 3, 7.5, 15, and 30 min. The
nature of the physiological reactions to the repeated exercise varied consid-
erably with the length of the work and rest periods. Oxygen consumption was
highest when the repeated exercise was done at a heart rate of 180 beats/min
with work periods of up to 3 min. Lung function was most efficient when the
heart rate was over 150 beats/min and the exercise period was less than 7.5
min. Repeated exercise at 165 beats/min for about 7.5 min had the greatest
effect on tissue utilization of oxygen.
1/1

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USSR

UDC:536.4.46

YERSHIN, Sh. A., RYBALOVA, R. P., SARSENBAYEV, Zh.

"Aerodynamics of Gas Streams and a Flame in a Homogeneous Wake (Isobaric and Gradient Flows)"

Translation: Results are discussed from a study of a nonisothermal stream and a gas flame at high wake-flow parameters. Isobaric and gradient flows are studied. An explicit expression of the dependence of effective coordinate $\xi(x)$ is produced and introduced in the method of the equivalent problem from the theory of heat conductivity as a function of the main flow parameters. The method of the equivalent problem from the theory of heat conductivity is extended to gradient and jet flows. The results of calculation agree satisfactorily with experimental results. 5 Figures; 2 Tables; 11 Biblio. Refs.

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USSR

SARTANIYA, V. G., KIREYEV, V. V., and KORSHAK, V. V., Moscow Chemical-
Technological Institute Imeni D. I. Mendeleyev

UDC 547.26'11

"Butoxychlorocyclotriphosphazotrienes"

Abstract: The synthesis of tetra- and pentabutoxydichlorocyclotriphosphazo-
trienes [TBP and PBP respectively] was carried out by treatment of hexa-
chlorocyclotriphosphazotriene with sodium butoxide in tetrahydrofurane at
low temperature. The following constants were determined: TBP -- d_4^{20}
1.3540, n_D^{22} 1.4720; PBP -- d_4^{20} 1.5535, and n_D^{22} 1.4618.

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USSR

SARKHANISHVILI, A. V., ZAALISHVILI, GG, and KUTATELADZE, K. K.

UDC 666.113.711'621'46'33'28

"Crystallization of Glasses in the System $SiO_2-Al_2O_3-MgO-Na_2O-MnO$ With Iron Oxide Impurities"

Tr. Gruz. Politekhn. In-t (Works of Georgian Polytechn. Inst.)
No. 8(128), pp. 7-12, 1968 (from Referativnyy Zhurnal--Khimiya, No 2, 1970, Abstract No 2 M 97 by V. D. Sal'nikov)

Translation: A study was made of the possibility of producing finely dispersed materials of glass in the system $SiO_2-Al_2O_3-MgO-Na_2O-MnO$ without the introduction of special crystallization stimulators to the glass. The influence of the partial replacement of SiO_2 with an equivalent quantity of Na_2O, Al_2O_3, or MnO on the technology and crystallization properties of the glasses was studied. It was established that with increasing Na_2O and MnO content, a reduction of the melting temperature of the glass from 1450 to 1400° is possible, as is an increase in the tendency of the glasses to crystallization. Crystallization in all specimens studied occurred volumetrically, which allowed a fine-grained crystalline product to be produced by two-stage crystallization.

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USSR

MOVSESYAN, M. A., ZAKHARYAN, A. B., SARUKHANOV, A. G., BARKHUDARYAN, L., and
ISHKHANYAN, A. S., Yerevan Physics Institute; Ministry of Health Armenian SSR

"Effect of a Permanent Magnetic Field on the Rat Myocardium Content of Na, K, Ca, and Glycogen in the Process of Acclimatization to the High Mountain Conditions of Aragats"

Translation: Considerable importance has been attached during the past few years to investigation of the effects of a magnetic field on the human and animal organisms. This is explained first by the fact that the intensity of magnetic fields utilized in industry and scientific research has been considerably magnified, and second -- by the fact that a connection has been established between the increase in the frequency of sudden deaths caused by cardiovascular failure and the formation of solar magnetic storms. At present the intensity of the permanent and temporary fields in free play attains a magnitude of 100,000 cersted, while impulsive magnetic structures can create a magnetic field with an intensity of up to 2,500,000 cersted.

Data obtained in investigations of the effect of a permanent magnetic field on the electrolyte (Na, K, Ca) and glycogen and content in the myocardium

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of rats during the process of acclimatization to high altitude conditions are cited in this report.

The investigations were carried out on 166 white nonbred rats 150-200 grams in weight transferred from Yerevan (900 meters above sea level) to Mount Aragats (3,250 meters above sea level).

At different periods of their habitation on the high mountain (24, hours, 7 and 40 days) a part of the rats were placed in a magnetic field with a magnitude of 7,800 oersted where they were kept for two hours. Together with the controls (rats not placed in the magnetic field) they were then sacrificed for the purpose of determining the myocardium content of the indexes mentioned. The electrolyte content was determined with the help of a DPF-58 type of flame photometer and expressed in milliequivalents per liter; the glycogen content was determined by the Mendel-Khuglas method.

The same indexes were studied in intact rats under Yerevan conditions. A comparison of the data obtained in the investigation of the intact rats under Yerevan conditions with the data obtained at different periods of habitation of the rats at the high altitude enabled us to arrive at a representation of the changes which take place in the myocardium content of Na, K, Ca, and

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glycogen during the process of acclimatization. At the same time the data obtained in the study of these two groups served as a control for study of the influence of the magnetic field.

The results of the above-described investigations are presented in the table.

It is obvious from the data obtained that during the process of acclimatization changes in the rat myocardium content of Na, K, Ca, and glycogen take place.

In the course of the 40-day habitation of the rats on Mount Aragats the myocardium content of glycogen gradually diminished, with the largest diminution noted on the seventh day. In the same animals the myocardium content of Ca gradually and only slightly increased, while changes in the quantity of Na and K were wave-like in character; the heart tissue's content of Na and K increased within 24 hours, decreased by the seventh day, and again increased by the 40th day.

It was found that placing the animals in a magnetic field for two hours affects the course of the indicated changes, particularly if the rats are placed in the magnetic field on the first day of their transfer from Yerevan to Mount Aragats. For instance, it was noted that when rats 22 hours after

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USSR

MOVSESYAN, M. A., et al., Biologicheskiy Zhurnal Armenii, Vol 24, No 2,
Feb 71, pp 95-97

their arrival on Mount Aragats were placed and kept for a period of 2 hours in
a magnetic field and then sacrificed to determine the myocardium content of
Na, K, Ca, and glycogen, the results obtained differed from the results
obtained in investigation of the intact animals.

Differing from the intact animals, no wave-like changes in the content
of Na, K, and Ca occur in the experimental rats. Under the influence of the
magnetic field the heart muscle's content of Na and K is considerably dimini-
shed. In the same animals the effect of the magnetic field tends to induce
a still greater decrease of the myocardium content of glycogen. When the
rats, however, were placed in the magnetic field on the 7th and 40th days on
Mount Aragats no particular changes were noted.

Thus the animals were found to be most sensitive to the influence of a
magnetic field when they had not become adapted to high altitude conditions.
As adaptation progresses the sensitivity of the organism to the influence of
the magnetic field decreases.

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Myocardium Content of Sodium, Potassium, Calcium, and Glycogen   Table 1

Place where animals were kept	Period of time at high altitudes	Manipulation	Sodium			Potassium		
			$M \pm m$	$*P_1$	$*P_2$	$M \pm m$	$*P_1$	$*P_2$
Yerevan	—	Intact	33.6±1.5	—	—	67.6±2.0	—	—
Aragats	24 Hours	Intact	43.3±1.8	0.001	—	78.4±1.5	0.05	—
		Under influence of magnetic field	27.7±0.5	0.05	0.001	54.5±3.3	0.01	0.001
	7 Days	Intact	28.0±0.3	0.01		61.7±2.1	0.1	
		Under influence of magnetic field	26.6±1.9	0.01	0.5	63.3±1.6	0.5	0.5
	40 Days	Intact	39.7±1.0	0.01		74.3±1.5	0.05	
		Under influence of magnetic field	36.6±0.9	0.5	0.05	73.5±1.7	0.05	0.5

(Table continued below)

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(Table continued from above)

Place where animals were kept	Period of time at high altitudes	Manipulation	Calcium			Glycogen		
			$M \pm m$	$*P_1$	$*P_2$	$M \pm m$	$*P_1$	$*P_2$
Yerevan Aragats	24 Hours	Intact	3.3+0.04			690.0+19.0		
		Intact	3.8+0.05	0.01	---	510.0+71.0	0.05	
	7 Days	Under influence of magnetic field Intact	3.3±0.15	0.5	0.05	258.0+17.7	0.02	0.01
		Under influence of magnetic field	3.2+0.10	0.5		220.0+20.0	0.001	---
	40 Days	Intact	3.7+0.17	0.05		250.0+17.7	0.01	0.2
		Under influence of magnetic field	3.9+0.08	0.01		305.0+11.6	0.01	---
		magnetic field	4.0+20.1	0.001	0.05	260.0+35.6	0.001	0.5

$*R_1$ -- Reliability coefficient of the difference in comparison with data m and data obtained in rats under Yerevan conditions

$*R_2$ -- Reliability coefficient of the difference in data obtained under Aragats conditions, under the influence of a magnetic field, and without it.

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172   031

TITLE--ROLE OF THE ADRENALS IN MYOCARDIAL ELECTROLYTE CHANGES IN
IRRADIATED ANIMALS -U-

AUTHOR--SARUKHANOV, A.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. EKSP. KLIN. MED. 1970, 10(1), 34-9

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RAT, ADRENAL GLAND, MYOCARDIUM, ELECTROLYTE, IRRADIATION, X
RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3009/0188

CIRC ACCESSION NO--AP0139051

STEP NO--UR/0507/70/010/001/0034/0039

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139051

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADULT RATS WERE (1) UNTREATED, (2) X IRRADIATED (800R), (3) ADRENALECTOMIZED, OR (4) ADRENALECTOMIZED AND, 3 DAYS LATER, X IRRADIATED (800R); MYOCARDIAL ELECTROLYTES WERE DETD. 10 MIN, 24 HR, AND 3 OR 5 DAYS POSTIRRADN. COMPARED WITH GROUP (1), IN GROUP (2) RATS, MYOCARDIAL NA AND CA DECREASED, BUT K REMAINED UNCHANGED; IN GROUP (3), CA, K, AND NA LEVELS FLUCTUATED SIGNIFICANTLY, WITH LITTLE OVERALL CHANGE IN NA AND CA BUT AN INCREASE IN K BY THE END OF THE EXPTL. PERIOD; IN GROUP (4) THE NA AND K CONTENTS GENERALLY INCREASED AND THAT OF CA DECREASED; THE NA-K RATIO WAS SIMILAR TO THAT OF GROUP (1), BUT THE K-CA RATIO WAS CONSIDERABLY HIGHER. FACILITY: ARM. INST. RENTGENOL. ONKOL., USSR.

PROCESSING DATE--04DEC70

USSR

SARUKHANOV, M. A., KHARITONOV, YU. YA.

UDC 539.192/.194+535.33/.34.01

"Normal Vibrations of Thionylomide Molecules"

V sb. Kolebatel'n. spektry v neorgan. khimii (Vibrational Spectra in Inorganic Chemistry -- Collection of Works), Moscow, "Nauka," 1971, pp 310-313 (from RZh-Fizika, No 5, May 71, Abstract No 5D137)

Translation: The normal vibrations of thionylomide OSNH and deuterothionylomide OSND molecules are analyzed. The force field and the shape of the vibrations is calculated and their characteristic nature is investigated.

1/1

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TITLE--SOLAR ACTIVITY, EARTH'S PRESSURE FIELD AND ATMOSPHERIC CIRCULATION
-U-

AUTHOR-(02)-SARUKHANYAN, E.I., SMIRNOV, N.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 3, 1970 PP 496-500.

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--ATMOSPHERIC CIRCULATION, SOLAR ACTIVITY, PRESSURE, CLIMATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1724   STEP NO--UR/0203/70/010/003/0496/0500

CIRC ACCESSION NO--AP0135307
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0135307

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. WITH AN INTENSIFICATION IN SOLAR
ACTIVITY DURING THE 11 YEAR CYCLE IN THE HIGH LATITUDES THE PRESSURE
INCREASES, WHEREAS IN THE SUBTROPICAL REGIONS IT DECREASES. HOWEVER, IN
ADDITION TO THE 11 YEAR CYCLE THERE ARE SECULAR CHANGES IN SOLAR
ACTIVITY. IT IS NATURAL TO EXPECT THAT DURING THE SECULAR CYCLE THERE
SHOULD BE OBSERVED THE SAME RESPONSE OF ATMOSPHERIC PRESSURE TO THE
INCREASE IN SOLAR DISTURBANCES AS DURING THE 11 YEAR CYCLE.   IN
CONFIRMING THIS THE AUTHORS EXAMINED THE REGION OF THE NORTH ATLANTIC
BEST COVERED WITH OBSERVATIONAL DATA ON ATMOSPHERIC PRESSURE. A STUDY
WAS MADE OF THE CHANGE IN PRESSURE FROM THE BEGINNING OF THIS CENTURY
WHEN THE MEAN LEVEL OF SOLAR ACTIVITY WAS LOW TO THE MIDDLE OF THE
CENTURY WHEN MAXIMUM VALUES WERE ATTAINED. TWO REGIONS OF THE ALANTIC
WERE EXAMINED: ONE TO THE NORTH OF 55DEGREESN, COVERING THE REGION OF
THE ICELANDIC LOW, AND THE OTHER SITUATED TO THE SOUTH OF 55DEGREES,
CHARACTERIZED BY HIGH ATMOSPHERIC PRESSURE. THE ANALYSIS LEADS TO A
CONCLUSION WHICH CONTRADICTS THE FEDOROV VIZE "SCCENTUATION" LAW WHICH
STATES THAT WITH AN INTENSIFICATION OF SOLAR ACTIVITY DURING THE 11 YEAR
CYCLE THERE IS AN INTENSIFICATION AND ACCENTUATION OF THE PRESSURE FIELD
OF A PARTICULAR SIGN, THAT IS, THERE IS A DEEPENING OF CYCLONES, WHEREAS
PRESSURE INCREASES IN ANTICYCLONIC FORMATIONS. DUE TO THE INSEPARABLE
UNITY OF CHANGES IN STRUCTURE OF THE EARTH'S PRESSURE FIELD AND GENERAL
CIRCULATION, THE MANIFESTATION OF SOLAR ACTIVITY WILL BE REFLECTED IN
THE NATURE OF CIRCULATORY PROCESSES.

UNCLASSIFIED

CIRC ACCESSION NO--AP0135307
ABSTRACT/EXTRACT--WITH AN INTENSIFICATION OF SOLAR ACTIVITY DURING THE 11
YEAR AND SECULAR CYCLES THERE WILL BE AN IMPAIRMENT OF ZONAL TRANSFER
AND DEVELOPMENT OF MERIDIONAL PROCESSES. WITH AN INTENSIFICATION OF
SOLAR ACTIVITY IN THE HIGH LATITUDES AND THE ZONE OF STATIONARY PRESSURE
FORMATIONS THERE IS AN INCREASE IN PRESSURE. IN THE SUBTROPICAL ZONE,
WHERE STATIONARY ANTICYCLONES PREVAIL, PRESSURE DROPS AT THIS TIME.
ACCORDINGLY, DURING THE MAXIMUM OF SOLAR ACTIVITY THERE IS ESSENTIALLY A
DEACCENTUATION OF THE PRESSURE FIELD. THIS NATURE OF THE BEHAVOIR OF
THE PRESSURE FIELD UNDER THE INFLUENCE OF SOLAR DISTURBANCE HAS AS A
RESULT THE IMPAIRMENT OF ATMOSPHERIC CIRCULATION DURING EPOCHS OF A HIGH
LEVEL OF SOLAR ACTIVITY AND AN INTENSIFICATION OF MERIDIONAL PROCESSES,
WHICH IS RESPONSIBLE FOR A CORRESPONDING NATURE OF FLUCTUATIONS IN THE
EARTH'S CLIMATE.   FACILITY: INSTITUTE OF BIOLOGY OF INTERNAL
WATERS.

1/3   021   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--THE POLE TIDE IN THE HIGH LATITUDES ATMOSPHERE --U--

AUTHOR-(03)-GUDKOVICH, Z.M, SARUKHANYAN, E.I., SMIRNOV, N.P.

CCUNTRY OF INFO--USSR, ARCTIC OCEAN

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL. 190, NO. 4, 1970, PP.
  954-957
DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, ATMOSPHERIC SCIENCES

TOPIC TAGS--GEOGRAPHIC LATITUDE, SEA ICE, SEA LEVEL, PRESSURE, ATMOSPHERE,
  ARCTIC CLIMATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0966   STEP NO--UR/0020/70/190/004/0954/0957

CIRC ACCESSICN NO--AT0110675
                    UNCLASSIFIED

CIRC ACCESSION NO--AT0110675

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRESENCE OF A NUTATIONALLY INDUCED POLE TIDE IN THE EARTH'S ATMOSPHERE HAS BEEN DEMONSTRATED AND THEREFORE ANY STUDY OF VARIATIONS OF THE ICE CONTENT IN ARCTIC SEAS MUST TAKE INTO ACCOUNT THE EXISTENCE OF 14 MONTH PRESSURE VARIATIONS WHICH OCCUR IN THE HIGH LATITUDES WHICH ARE ASSOCIATED WITH MOTION OF THE POLES. SEA LEVEL PRESSURE WAS ANALYZED FOR THOSE LATITUDES USING MEAN MONTHLY PRESSURE MAPS. THE AUTHORS PROCESSED 151 SERIES OF MEAN MONTHLY PRESSURES FOR THE 14 YEARS 1951-1964. THE PERIODOGRAM ANALYSIS METHOD WAS USED. THIS MADE IT POSSIBLE TO DETERMINE THE PHASES AND AMPLITUDES OF 14 MONTH PRESSURE VARIATIONS FOR ALL SELECTED POINTS. ANALYSIS OF THE CONSTRUCTED ISOAMPLITUDES MAP INDICATES THAT IN THE ARCTIC ATMOSPHERE THERE ARE APPRECIABLE 14 MONTH PRESSURE FLUCTUATIONS WHOSE AMPLITUDES ATTAIN 1.5 MB, WHICH IS ABOUT 50PERCENT OF THE AMPLITUDE OF THE ANNUAL VARIATION. THIS IS NOT OBSERVED IN SOME AREAS, BUT IN THE ARCTIC BASIN THERE ARE FIVE REGIONS WHERE THE AMPLITUDE OF THE PRESSURE VARIATION EXCEEDS 0.5 MB. WITH A CHANGE IN LONGITUDE FROM WEST TO EAST THE PHASES OF THESE VARIATIONS DECREASE BY A VALUE APPROXIMATELY CORRESPONDING TO THE LONGITUDE DIFFERENCE OF THESE REGIONS. CHANGES DO NOT OCCUR GRADUALLY, BUT IN A JUMP. THE AUTHOR GIVES PARTICULAR ATTENTION TO THIS PHENOMENON AND ITS EFFECTS IN THREE OF THE REGIONS OF INCREASED NUTATIONAL PRESSURE ANOMALIES: THOSE OVER THE BARENTS SEA, TAYMYR PENINSULA IS ON HOW THIS AFFECTS THE ICE CONTENT OF THESE SEAS.

CIRC ACCESSION NO--AT0110675
ABSTRACT/EXTRACT--FOR EXAMPLE, THE ICE CONTENT OF THE LAPTEV SEA IS
    DETERMINED BY THE PRESSURE GRADIENT BETWEEN THE FIRST AND THIRD OF THE
    ABOVE MENTIONED REGIONS. THE MOST UNFAVORABLE ICE CONDITIONS OCCUR
    WHEN THE RADIUS VECTOR PASSES THROUGH THE GREENWICH MERIDIAN; THE MOST
    FAVORABLE ICE CONDITIONS PREVAIL WHEN THE RADIUS VECTOR PASSES THROUGH
    THE MERIDIAN 160DEGREES. AS A COMPLICATING FACTOR, DURING DIFFERENT
    PERIODS THE AIR TRANSFER ANOMALIES EXERT A DIFFERENT EFFECT ON THE
    FORMATION OF ICE CONDITIONS. THE MOST IMPORTANT MONTH IS MAY, WHEN THE
    MAXIMUM NUTATIONAL ANOMALIES OF AIR TRANSFER ARE OBSERVED. DURING YEARS
    WHEN NUTATIONAL ANOMALIES OCCUR IN MAY THE POLE TIDE PRESSURE WAVE HAS
    ITS GREATEST EFFECT ON ICE CONDITIONS. THIS OCCURS EACH SEVEN YEARS.
       FACILITY: ARCTIC AND ANTARCTIC SCIENTIFIC RESEARCH INSTITUTE.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--16OCT70

1/3   023
TITLE--RELATIONSHIP BETWEEN THE DEFORMATION FORCE AND MOVEMENT OF
ATMOSPHERIC CENTERS OF ACTION -U-
AUTHOR-(03)-MAKSIMOV, I.V., SARUKHANYAN, E.I., SMIRNOV, N.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL. 190, NO. 5, PP. 1095-1097

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--LOW PRESSURE, HIGH PRESSURE, POLAR AREA, EQUATOR, GEOGRAPHIC
LATITUDE, VECTOR, ROTATIONAL FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED   STEP NO--UR/0020/70/190/005/1095/1097
PROXY REEL/FRAME--1991/0972

CIRC ACCESSION NO--AT0110677
                    UNCLASSIFIED

CIRC ACCESSION NO--AT0110677
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POTENTIAL OF THE DEFORMAITON
FORCE ARISING AS A RESULT OF MOTION OF THE EARTH'S POLES WAS
INVESTIGATED. THE HORIZONTAL COMPONENT OF THIS FORCE WILL REPRESENT THE
VECTOR SUM OF TWO COMPONENTS, ONE DIRECTED ALONG THE MERIDAN AND THE
OTHER ALONG THE PARALLEL. THE MERIDIONAL COMPONENT OF THE DEFORMATION
FORCE HAS MAXIMUM AND OPPOSITELY DIRECTED VALUES AT THE POLES AND AT THE
EQUATOR AND IS EQUAL TO ZERO AT 45DEGREESN AON S. THE LATITUDE
COMPONENT OF THE FORCE IS MAXIMUM AND OPPOSITELY DIRECTED AT THE POLES
AND IS EQUAL TO ZERO AT THE EQUATOR. AS A RESULT, THE TOTAL HORIZONTAL
COMPONENT OF THE DEFORMATION FORCE HAS A COMPLEX NATURE OF CHANGE WITH
LATITUDE. AT THE POLES THE VALUES OF THE FORCE VECTOR ARE MAXIMUMA AND
WITH COUNTERCLOCKWISE ROTATION THE END OF THE VECTOR DESCRIBES A CIRCLE.
IN THE LATITUDINAL ZONE 55-75DEGREES, AS A RESULT OF PREDOMINANCE OF
THE LATITUDE COMPONENT, THE TRAJECTORY DESCRIBED BY THE END OF THE FORCE
VECTOR IS AN ELLIPSE WHICH EXTENDS MORE AND MORE ALONG THE PARALLEL WITH
APPROACH TO LATITUDE 45DEGREES. AT 45DEGREES THE FORCE CHANGES ONLY IN
A ZONAL DIRECTION. THE MERIDIONAL COMPONENT OF THE FORCE IS ABSENT.
SOUTHWARD IT APPEAR AGAIN, BUT NOW IT IS DIRECTED IN THE OPPOSITE
DIRECTION. AT 30DEGREES THE END OF THE TOTAL FORCE VECTOR, NOW ROTATING
CLOCKWISE, AGAIN DESCRIBES A CIRCLE, BUT WITH HALF THE RADIUS OF THE
CIRCLE AT THE POLE. WITH APPROACH TO THE EQUATOR THIS CIRCLE BECOMES
CLOSER TO AN ELLIPSE, ELONGATED ALONG THE MERIDIAN, AND AT THE EQUATOR
THE HORIZONTAL COMPONENT OF THE DEFORMATION FORCE AGAIN ATTAINS MAXIMUM
VALUES, CHANGING ONLY IN A MERIDIONAL DIRECTION.

UNCLASSIFIED

CIRC ACCESSION NO--AT0110677
ABSTRACT/EXTRACT--THE HORIZONTAL COMPONENT OF THE DEFORMATION FORCE IS
  COMMENSURABLE WITH THE FORCES WHICH OPERATE IN THE HORIZONTAL PLAE AND
  THEREFORE ASSUMES PARTICULAR IMPORTANCE IN STUDIES OF THE DYNAMICS OF
  ATMOSPHERIC PROCESSES. SEVEN YEAR SERIES OF DATA ON THE LATITUDE
  ANDLONGITUDE OF THE ICELANDIC LOW AND THE AZORES HIGH WERE PROCESSED BY
  HARMONIC ANALYSIS FOR THE YEARS 1945-1951, A PERIOD OF CONSIDERABLE
  AMPLITUDE OF POLAR OSCILLATIONS. THE AMPLITUDES AND PHASES OF 14 MONTH
  VARIATIONS OF LATITUDE AND LONGITUDE OF THE CENTERS OF ACTION WERE USED
  IN COMPUTING AND CONSTRUCTION THE ELLIPSES OF 14 MONTH DISPLACEMENTS OF
  THE CENTER OF THIS HIGH AND LOW. DURING THE CONSIDERED PERIOD THE 14
  MONTH MOVEMENTS OF THESE CENTERS OCCURRED IN ELLIPSES ORIENTED FROM SW
  TO NE IN OPPOSITE DIRECTIONS. THIS RESULT IS IN FULL AGREEMENT WITH THE
  NATURE OF THE SPATIAL CHANGE OF THE HORIZONTAL COMPONENT OF THE
  DEFORMATION FORCE. THE AMPLITUDE OF THE 14 MONTH DISPLACEMENTS OF THE
  CENTER OF THE ICELANDIC LOW IN LATITUDE WAS APPROXIMATELY 1.5 TIMES
  GREATER THAN THE CORRESPONDING MOVEMENTS OF THE AZORES HIGH. IT CAN
  THEREFORE BE CONCLUDED THAT THE 14 MONTH MOVEMENTS OF THE ATMOSPHERIC
  CENTERS OF THE ATMOSPHERIC CENTERS OF ACTION IN THE ATLANTIC ZONE IN THE
  NORTHERN HEMISPHERE OCCUR UNDER THE INFLUENCE OF THE HORIZONTAL
  COMPONENT OF THE DEFORMATION FORCE.   FACILITY: INSTITUTE OF THE
  BIOLOGY OF INTERIOR WATERS.

UNCLASSIFIED

TITLE--PRESSURE,POLAR TIDE,AND ITS INFLUENCE ON THE ICE CONDITIONS OF THE
ARCTIC SEAS -U-

AUTHOR-(03)-GUDKOVICH, Z.M., SARUKHANYAN, E.I., SMIRNOV, N.P.

COUNTRY OF INFO--USSR

SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 3, PP 426-437

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, ATMOSPHERIC SCIENCES

TOPIC TAGS--PRESSURE, ATMOSPHERE, POLAR AREA, OCEAN, CYCLONE, ICE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1867   STEP NO--UR/0213/70/010/003/0426/0437

CIRC ACCESSION NO--AP0129227
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0129227
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSIDERATION IS BEING GIVEN TO
  THE FOURTEEN MONTH VARIATION OF ATMOSPHERIC PRESSURE OVER THE ARCTIC
  CAUSED BY THE NUTATION OF THE EARTH'S POLES. TO EXPLAIN THE SPECIFIC
  FEATURES OF THE VARIATION A HYPOTHESIS IS ADVANCED ACCORDING TO WHICH
  THE NUTATIONAL VARIATIONS OF ATMOSPHERIC PRESSURE ARE DUE TO THE
  SUPERPOSITION OF SECONDARY WAVES UPON THE PRIMARY CIRCUMPOLAR PRESSURE
  WAVE. THESE WAVES ARISE OWING TO THE INCLUENCE OF THE PRESSURE POLAR
  TIDE ON THE INTENSITY OF CYCLONIC ACTIVITY IN THE ZONES OF CYCLOGENESIS.
  THE ANALYSIS OF THE NUTATIONAL FLUCTUATIONS OF THE PRESSURE GRADIENTS
  IN THE THREE MAIN REGIONS OF THE ARCTIC MADE IT POSSIBLE TO EXPLAIN THE
  PECULIARITIES OF THE PREVIOUSLY ESTABLISHED RELATION OF ICE AND
  HYDROLOGICAL CONDITIONS TO THE MOVEMENT OF THE EARTH'S POLE, AS WELL AS
  TO FIND OUT A NUMBER OF NEW REGULARITIES OF THIS PHENOMENON.
  FACILITY: ARKTICHESKIY I ANTARKTICHESKIY NAUCHNO-ISSLED. INSTITUT.

UNCLASSIFIED

USSR

SARV. V., Institute of Thermophysics and Electrophysics, Estonian SSR
Academy of Sciences

UDC 621.314.263

"Basic Principles of Control and Control Circuits of Magnetic Frequency
Multipliers With Self-Magnetization"

Tallin, Izvestiya Akademii Nauk Estonskoy SSR, Fizika-Matematika, Vol 20,
No 2, 71, pp 182-187

Abstract: The basic principles of control and the structural control cir-
cuits for transformers of electrical power parameters are classified and
compared on the basis of symmetrical magnetic frequency multipliers with
self-magnetization of the constant component of the output current from the
structural element. It is found that it is possible to construct all the
basic transformers from identical elements. The structural element is an
n-core symmetrical frequency multiplier with load, magnetization, and control
circuits.

Since the principles and the magnitude of the load have no direct counter
influence on the control processes, the structural circuits of load,
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USSR

SARV, V., Izvestiya Akademii Nauk Estonskoy SSR, Fizika-Matematika, Vol 20, No 2, 71, pp 182-187

magnetization, and control may be selected independently of one another. The author states that it is possible to match two or all three types of circuits. In such event the matched circuits have a common structure.

The basic means of controlling the output voltage are by varying the magnetization current, by controlling the resistance, or by a controlled counter voltage. These latter two methods are rapid ones.

The article contains five figures and a bibliography of 10 titles.

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- 6 -

BIOLOGY

Biophysics

SARVAZYAN, A. P.

"Acoustical Methods of Studying Biological Systems and Biopolymer Solutions"

Abstract: The many available methods of studying biological systems have been little used to date, e.g., low-frequency techniques, dynamic acoustical methods of investigating the kinetics of biochemical processes and measuring absorption spectra for ultrasound in a broad range of frequencies to determine the time of relaxation of various molecular movement, correlations between acoustical, electrical, and spectroscopic parameters of solutions of macromolecules, and so forth. The article examines the potential of acoustical methods for solving biological and biochemical problems and analyzes some of the results obtained with these methods in different frequency ranges and with various measurement techniques.

1/1

1/2   021   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--REMOVAL OF ZINC FROM NICKEL BRASSES -U-

AUTHOR-(03)-MARSHAKOV, I.K., KARAVAYEVA, A.A., SARYAN, S.A.

COUNTRY OF INFO--USSR

SOURCE--ZASHCH. METAL. L970, 6(2), 241-3

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BRASS, NICKEL CONTAINING ALLOY, ZINC CONTAINING ALLOY,
   CORROSION RATE, ELECTROCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1898   STEP NO--UR/0365/70/006/002/0241/0243

CIRC ACCESSION NO--AP0118860

CIRC ACCESSION NO--AP0118860

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN STUDIES OF CU-NI BRASSES, THE
CORROSION RATE IN 0.5N HCL AND IN 0.1N HCL PLUS 0.01N CUCL SUB2 WAS
MEASURED BY LOSS OF WT. AND THE AMT. OF THE COMPONENTS WHICH ENTERED THE
SOLN. THE KINETICS OF THE ELECTROCHEM. REACTIONS WERE STUDIED UNDER
STATIC CONDITIONS AND ON ROTATING ELECTRODES BY GALVANOMETRIC METHODS.
THERE IS A CONCN. POLARIZATION DURING ANODE DISSOLN. OF THE ALPHA AND
BETA PHASES OF BRASS. INTRODUCTION OF NI PARTIALLY STOPS THE ANODE
DISSOLN. AND RAISES THE CORROSION POTENTIAL. THIS UPSURGE OF POTENTIAL
DECREASES THE ZN REMOVAL OF BRASS.   FACILITY: VARONEZH. GOS.
UNIV., VORONEZH, USSR.

Acc. Nr: $AP0046228$ Ref. Code: $UR0646$

THE SELF-CONSISTENT FIELD NEAR THE CRITICAL POINT IN THE ANTIFERROMAGNETIC ISING MODEL

V. Ya. Krivnov, O. A. Olkhov, B. N. Provotorov, M. Ye. Sarychev

From the physical considerations the class of diagrams is found which determine the thermodynamic behaviour of the antiferromagnetic and ferromagnetic Ising models for $T < T_k$ (T_k being the critical temperature) in the case of interaction of the nearest neighbours. By means of summation of these diagrams the type of a singularity is found for the antiferromagnetic susceptibility and in the ferromagnetic case — for the polarisation, susceptibility and specific heat. In the ferromagnetic case the region of the critical behaviour is determined ($z^{-2} < \dfrac{T_k - T}{T_k} < z^{-1}$, z being the number of the nearest neighbours). The reconstruction of the series of diagrams is carried out, which makes it

REEL/FRAME
19781344

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AP0046228

possible correct evaluation of the critical temperature. The summation of diagrams leads to a transcendent equation and concrete results are obtained by means of its numerical solution. The calculations of the critical behaviour in the present method are less voluminous than if the high- and low-temperature expansions are exploited. The results obtained are in a good accordance with the experimental data and with the results of the numerical methods.

19781345

USSR

UDC 669.14.018.262

VOSTRIKOV, A. A., SARYCHEVA, L. P., SHARIPOV, E. I., RABINOVICH, YE. I., and KONDRAT'YEV, L. M., Magnitogorsk Metallurgical Combine

"On the Question of Aluminum Nitrides in 08Yu Steel"

Moscow, Stal', No 11, Nov 73, pp 1034-1036

Abstract: The microstructure of 08Yu steel containing (in %): 0.04 C, 0.01 Si, 0.3 Mn, 0.012 S, 0.006 P, 0.02 Cr, 0.03 Ni, 0.09 Cu, 0.02 As, and 0.065 Al, was investigated to determine the role of aluminum nitrides in this steel. It was found that the high-temperature winding of strip into coils (780° C) leads to the formation of large aluminum nitride precipitates (up to 1 micron) in hot-rolled and annealed (unaging) steel. At a low coiling temperature (580° C), nitrogen atoms are found in solid solution and, during the final anneal, form finely dispersed aluminum nitrides with an elongated grain. S. A. BRATUS', D. V. VOSTRIKOVA, I. S., FRIVEL', AND T. V. BAKLUSHINA participated in this work. Three figures, one table, five bibliographic references.

1/1

- 45 -

1/2   015   UNCLASSIFIED   PROCESSING DATE--11SEP70

TITLE--INDUCTION OF TUMOR (T) ANTIGEN OF SV40 VIRUS IN DIFFERENT TISSUE
  CULTURES -U-

AUTHOR--ALTSHTEYN, A.D., SARYCHEVA, O.F.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 1, PP 78-84

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUMOR, TISSUE CULTURE, ANTIGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0061   STEP NO--UR/0402/70/000/001/0078/0084

CIRC ACCESSION NO--AP0103741
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0103741

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE CAPACITY OF SV40 VIRUS TO
INDUCE SYNTHESIS OF "TUMOR" (T) ANTIGEN IN DIFFERENT CELL CULTURES WAS
ESTABLISHED BY DIRECT IMMUNOFLUORESCENT METHOD. THE LACK OF CLEAR CUT
MANIFESTATIONS OF THE CYTOPATHIC EFFECT IN CULTURES UNDER STUDY WAS
ASSOCIATED WITH THE INABILITY OF THE VIRUS TO MULTIPLY IN THE MAJORITY
OF CELLS IN THE POPULATION. THE LINEAL RELATIONSHIP WAS FOUND TO EXIST
BETWEEN THE DOSE OF SV40 VIRUS AND PER CENT OF T ANTIGEN CONTAINING
CELLS 48 HOURS AFTER INOCULATION OF GREEN MONKEY KIDNEY CELL CULTURE.
THIS PERMITTED TO USE COUNTING OF T ANTIGEN CONTAINING CELLS FOR THE
QUANTITATIVE STUDY OF THE VIRUS. THE DIRECT IMMUNOFLUORESCENT METHOD OF
DETECTION OF T ANTIGEN PERMITTED RAPID IDENTIFICATION OF SV40 VIRUS IN
CELL CULTURES. ACCELLERATION OF SYNTHESIS OF SV40 VIRUS T ANTIGEN IN
GREEN MONKEY KIDNEY CELL CULTURE WAS DEMONSTRATED AT HIGHER TEMPERATURE
(40DEGREESC) OF INCUBATION.

UNCLASSIFIED

1/2   011   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--EFFECT OF THE NATURE OF THE PROMOTER ON THE CATALYTIC ACTIVITY OF
   ALUMINOCHROMIUM CATALYSTS IN ISOPENTANE DEHYDROGENATION -U-
AUTHOR-(03)-DADASHEV, B.A., SARYDZHANOV, A.A., GADZHIKASUMOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--AZERB. NEFT. KHOZ. 1970, (1), 36-7 (RUSS)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYST ACTIVITY, METAL OXIDE, DEHYDROGENATION, ISOPENTANE,
   POTASSIUM OXIDE, CESIUM COMPOUND, RUBIDIUM COMPOUND/(U)K5 CATALYST,
   (U)A19 CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1123   STEP NO--UR/0487/70/000/001/0036/0037

CIRC ACCESSION NO--AP0123550

CIRC ACCESSION NO--AP0128550
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OXIDE PROMOTERS WERE TESTED AT
2.5PERCENT CONCRS. (RH $SUB2$ O $SUB3$ AND CS $SUB2$ O FOR INDUSTRIAL CATALYST
K,5 AND CS $SUB2$ O, K $SUB2$ O, RB $SUB2$ O, CEO $SUB2$, AND YB $SUB2$ O $SUB3$ FOR
AL,CR CATALYST A,19). THE ALKALI METALS WERE THE ONLY ONES AFFECTING
YIELDS AND SELECTIVITY IN THE DEHYDROGENATION OF ISOPENTANE (I) TO
ISOAMYLENES. PROMOTION OF A,19 CATALYSTS BY K $SUB2$ O RAISED YIELDS FROM
20-18 AND 32-4 TO 37-3 AND 40-3PERCENT AND SELECTIVITY FROM 54-9 AND
60-5 AND 68-70PERCENT, RESP., RELATIVE TO UNPROMOTED K,5 CATALYST,
WHENDEHYDROGENATION OF I WAS CARRIED OUT IN STATIONARY AND FLUIDIZED
BEDS AT 530 AND 350-75DEGREES AND VOL. INPUT RATES OF 0.5-2.0 AND 1-2.65
HR PRIME NEGATIVE1, RESP. YIELDS AND SELECTIVITY UNDER STATIONARY
CATALYST CONDITIONS WERE 26-3 AND 43-55PERCENT WHEN UNPROMOTED A,19
CATALYST WAS USED. RB $SUB2$ O AND CS $SUB2$ O WERE SLIGHTLY LESS EFFECTIVE
THAN K $SUB2$ O. FOR STATIONARY CATALYST CONDITIONS, PROMOTION OF K,5
CATALYST BY CS $SUB2$ O RAISED YEILDS AND SELECTIVITY TO 23-20 AND
63.5-65PERCENT, RESP.

UNCLASSIFIED

USSR

UDC 519.214.519.217

SARYHSAKOV, T. A., and SARYMSAKOV, K. S.

"Central Limit Theorem for Homogeneous Markov Chains"

Nauch. tr. Tashkent un-t (Scientific Works of Tashkent University), No 377, 1970, pp 227-239 (from Referativnyy Zhurnal - Matematika, No 8, Aug 71, Abstract No 8V52 by B. Rogozin)

Translation: A central limit theorem for homogeneous Markov chains is presented in terms of topological semifields with a measure (Referativnyy Zhurnal - Matematika, 1970, Abstract No 3B136 K)

1/1

USSR

SARYMSAKOV, T. A., MIRZAKHMEDOV, M. A.

UDC: 519.21

"Stationary Processes on Topological Half-Fields and the Problem of Predicting Them"

Nauch. tr. Tashkent. un-t (Scientific Works. Tashkent University), 1970, vyp. 394, pp 169-175 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V148)

[No abstract]

1/1

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USSR

MIRONOV, A. V. and SARYMSAKOV, T. A., Academician of the Uzbek Academy of Sciences

UDC: 513.88:513.83

"The Norm Concept of a Linear Operator in Local Convex Space"

Moscow, Doklady Akademii Nauk SSSR, vol 204, No 1, 1 May 1972, pp 38-41

Abstract: A real or complex vector space E is defined as being normalized over the half-field R^Δ, where

$$R^\Delta = \prod_{q \in \Delta} R_q^1$$

is the direct product of Δ samples of real straight lines R^1 in Tikhonov topology, if the given mapping $\|\ldots\|: E \to R_+^\Delta$, known as the norm over R^Δ, satisfies the following conditions: $\|x\| = 0$ if and only if $x = 0$; $\|\lambda \cdot x\| = |\lambda| \cdot \|x\|$, where $\lambda \in R^1$ and is a scalar; $\|x + y\| \leqslant \|x\| + \|y\|$. In a second definition, the linear operator $A: E \to F$ has the norm $\|A\|: R_+^\Delta \to R_+^\Delta$, which can be determined from the equation $\|A\|(a) = \sup_{\|x\| \leqslant a} \|Ax\|$, where $a \in R_+^\Delta$. Examples are given in the use of these definitions, and four theorems involving them are stated and proved. The authors are associated with the V. I. Lenin State University of Tashkent.

1/1

USSR

SARYMSAKOV, T. A., Academician of the Academy of Sciences of the Uzbek SSR, KHADZHIYEV, Dzh., Tashkent State University imeni V. I. Lenin

"Topological Moduli Over Half-Fields of the First Kind"

Abstract: The work is a continuation of research done by Sarymsykov and others in the field of topological half-fields (M. Ya. Antonovskiy et al., "Topological Half-Fields", Tashkent, 1960; M. Ya. Antonovskiy et al., "Works of Tashkent State University, Mathematics," № 208, 1962; A. M. Dektyarev, Ibid). For the sake of simplicity, a Tikhonov half-field is taken as the basic half-field. Most of the results can be extended to the case of an arbitrary half-field of the first kind without changes.

Let X_q be the modulus over the half-field E_q and let $\prod_q X_q \left(\sum_q X_q \right)$ be the direct product (sum) of the moduli X_q for each $q \in \Delta$. The sum $\sum_q X_q$ and the product $\prod_q X_q$ are converted to moduli over the half-field $E = \prod_q E_q$ if

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USSR

SARYMSAKOV, T. A. et al., DAN SSSR, vol 200, No 5, Oct 71, pp 1041-1043

the operations of addition and multiplication by elements E are introduced

by coordinates. In the case where X_q are topological moduli, moduli $\prod_q X_q$

and $\sum_q X_q$ are considered with Tikhonov topology. Thirteen theorems are

given. Bibliography of five titles.

2/2

USSR   UDC 519.214.519.217

SARYMSAKOV, T. A., and SARYMSAKOV, K. S.

"Central Limit Theorem for Homogeneous Markov Chains"

Nauch. tr. Tashkent un-t (Scientific Works of Tashkent University), No 377, 1970, pp 227-239 (from Referativnyy Zhurnal - Matematika, No 8, Aug 71, Abstract No 8V52 by B. Rogozin)

Translation: A central limit theorem for homogeneous Markov chains is presented in terms of topological semifields with a measure (Referativnyy Zhurnal - Matematika, 1970, Abstract No 3B136 K)

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USSR

UDC 519.210

SARYMSAKOV, T. A., KUCHKAROV, Ya Kh., and ISLAMOVA, Kh. Ya., Taskent State
University imeni V. I. Lenin

"Upper and Lower Functions for Series of Independent Random Numbers"

Abstract: Necessary and sufficient conditions are given for a series of functions
to belong to an upper or lower class. The results obtained are generalized from
those of W. Feller (Transactions of the American Mathematical Society, Vol 54,
1943, p 373 and p 361) and extended to unbounded random numbers. The authors
examine a topological space consisting of a full topological half-field, a
topological Boolean algebra of its idempotents, a maximal co-final, and a measure
defined on the maximal co-final. A series of independent random numbers having
zero mathematical expectation and finite dispersion is considered. Conditions are
given for series of functions to belong to upper or lower classes, depending on
the convergence or divergence of other series as defined by derived relations.
Three theorems are given with proofs. Orig. art. has 5 refs.
1/1

USSR

UDC 519.210

SARYMSAKOV, T. A., Academician of the Academy of Sciences Uzbek SSR, and MIRZAKHMEDOV, M. A., Tashkent State University imeni V. I. Lenin

"Steady-State Processes on Hilbert Spaces Over Half-Fields"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 3, 1971, pp 529-530

Abstract: Let X be a Hilbert space over the half-field R^Δ. The family of elements ξ_t of the space X depending on the parameter $t \in R^\Delta$ is said to be a random process. The function $R(t,s) = (\xi_t, \xi_s)$ with values in $\mathcal{R}^\Delta$ is said to be the correlation function of the random process. A random process is said to be steady-state if $(\xi_t, \xi_s) = \xi_{tth}, \xi_{sth})$ for any $h \in R^\Delta$. Consider $\sum_u a_u \cdot \xi_{t_u}$, where a, $t \in R^\Delta$. The aggregate of such sums and their limits in the sense of convergence in the norm is designated as $H(\xi_t)$. $H(\xi_t)$ is said to be the space of values of the process ξ_t. It is proved that on the space $H(\xi_t)$ there exists a family of unitary operators U_t^u such that

$$U_{t_\mu}\xi_{s_\mu} = \xi_{(t+s)_\mu}$$

for any t, $s \in R^\Delta$.
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USSR

SARYMSAKOV, T. A., et. al.

$$\mu_x \left(\bigvee_{e \in V} \left\{ e : \bigwedge_{m=1}^{\infty} \bigvee_{n=m}^{\infty} \frac{|S_n| e}{\sqrt{\mu(xS_n^2)\ln\ln\mu(xS_n^2)}} - 1 \right\} \right) = 1.$$

Here

$$g_k = \bigvee_{e \in V} \left\{ e : |X_k| e < \frac{1}{2} m_k e \right\},$$

V is the set of idempotents of the half field,

$$m_k = o\left[\left(\frac{\mu(xS_n^2)}{\ln\ln\mu(xS_n^2)} \right)^{\frac{1}{2}} \right].$$

$\bar{g}_k = 1 - g_k$ (1 is a half field unit), $S_n = \sum_{k=1}^{n} X_k$, μ is the sign of the integral.

1/2   009
TITLE--MOLECULAR WEIGHT DISTRIBUTION AND FUNCTIONALITY OF OLIGOMERIC
  POLYDIETHYLENE GLYCOL ADIPATES -U-

UNCLASSIFIED   PROCESSING DATE--27NOV70

AUTHOR-(04)-YEVREINOV, V.V., GERBICH, V.I., SARYNINA, L.I., ENTELIS, S.G.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 829-35

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHYLENE GLYCOL, MOLECULARWEIGHT, CHROMATOGRAPHIC ANALYSIS,
  HYDROXYL RADICAL, SILICA GEL/(U)ASK SILICA GEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1263

STEP NO--UR/0459/70/012/004/0829/0335

CIRC ACCESSION NO--AP0134937

UNCLASSIFIED

CIRC ACCESSION NO--AP0134937
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OLIGOMERIC POLY(DIETHYLENE GLYCOL
  ADIPATES) (I) (OF MOL. WT. 370-2240) WERE FRACTIONATED BY ELUTION
  CHROMATOG. (BY USING SILICA GEL ASK (II) AS A SOLID PHASE AND MECOET AS
  AN ELUENT).   THE FRACTIONATION OF I DEPENDED PRIMARILY ON THE
  ADSORPTION INTERACTION OF TERMINAL OH GROUPS WITH II.   THE PERCENTAGE OF
  I MOLS. CONTG. FEWER THAN 2 TERMINAL OH GROUPS AND THEIR MOL. WT.
  DISTRIBUTION WAS EVALUATED FROM THE DEVIATION OF THE MU SUBN PRIMEOH:MN
  RATIO FROM UNITY (MU SUBN IS THE NO. AV. MOL. WT. AND MU SUBN PRIMEOH IS
  THE MOL. WT. DETD. FROM THE NO. OF TERMINAL OH GROUPS).
  FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

TITLE--DOUBLE MEMBRANE DILATOMETER -U-   UNCLASSIFIED   PROCESSING DATE--02OCT70

AUTHOR-(05)-SARYCHINA, L.I., ANTROPOV, A.A., YEVREINOV, V.V., ENTELIS, S.G., ROZHKOV, A.K.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3), 705-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DILATOMETRIC ANALYSIS, POLYMERIZATION, CHEMICAL REACTION RATE, OLIGOMER, ADIPATE, POLYETHYLENE, ORGANIC ISOCYANATE, CHEMICAL LABORATORY APPARATUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0312

STEP NO--UR/0459/70/012/003/0705/0709

CIRC ACCESSION NO--AP0111506

UNCLASSIFIED

CIRC ACCESSION NO--AP0111536

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DILATOMETER CONSISTS OF 2 HERMETICALLY SEALED CHAMBERS SEPD. BY A MEMBRANE. THE POLYMN. IS CONDUCTE IN 1 CHAMBER AND THE OTHER IS CONNECTED TO A REGULATING RECORDING SYSTEM, WHICH AUTUMATICALLY EQUALIZES THE PRESSURE ON BOTH SIDES OF THE MEMBRANE AND RECORDS ITS CHANGES. THE APP. WAS CHECKED BY DETG. THE RATE CONSTS. OF THE REACTION BETWEEN OLIGOMERIC POLY(ETHYLENE ADIPATE) AND ALPHA NAPHTHYLENE DIISOCYANATE, HEXAMETHYLENE DIISOCYANATE, OR 4,4PRIME DIPHENYLMETHANE DIISOCYANATE, DILATOMETRICALLY AS WELL AS BY A CHEM. METHOD (H. E. STAGG, 1946).

UNCLASSIFIED

SARYYEVA, Z. A.

THE EFFECT OF HYPODYNAMIA AND HYPOKINESIA ON THE ARTERIAL BED OF THE RABBIT'S HIND LEGS

[Article by Z.A. Saryyeva, Chair of Normal Anatomy (headed by Professor M.G. Prives, Honored Scientist), First Leningrad Medical Institute imeni Academician I.P. Pavlov; Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, Russian, No 11, 1971, submitted 22 December 1970, pp 105-109]

In view of the increasing development of aviation and cosmonautics, in the Soviet and foreign literature there is more and more frequent publications of works dealing with the effect of stress factors on the human and animal organism.

The chair of normal anatomy, First Leningrad Medical Institute imeni Academician I.P. Pavlov, has been investigating the effect of stress factors on the structure of body systems for more than 15 years, under the leadership of Professor M.G. Prives, Honored Scientist. Among the investigations dealing with the effect of stress factors, in the last few years studies were begun of the effect of hypodynamia and hypokinesia on the animal organism (M.G. Prives, 1968, 1970; A.V. Drozdova, 1970; L.A. Aleksina, 1969). In the literature on this subject there is prevalence of studies pursued using physiological methods.

The cardiovascular system is of particular interest (with respect to the effect of restricted movement), since blood is the most labile tissue of the organism and is the one to be the most readily redistributed in the body.

For this reason, our objective included investigation of changes in the arterial bed of the rabbit's hind legs under the influence of restricted movement. We failed to find any anatomical works on this subject in the literature.

We used 20 rabbits (weighing 2300-2500 grams) as our material; five were controls, and 15 were kept in special cages that restricted their movements considerably, especially with respect to the hind legs. The animals were examined at different times (1, 2,

- 128 -

USSR

UDC 669.017:620.18

KARSANOV, G. V., KURDYUMOVA, G. G., MIL'MAN, Yu. V., PONOMAREV, Yu. N., SARZHAN, G. E., TREFILOV, V. I., FIRSTOV, S. A., KHAZANOVA, T. P., and YUSHKO, V. G., Moscow, Kiev

"Investigation of the Structural Condition and Mechanical Properties of a Two-Phase Alloy Containing Chromium and Nickel"

Abstract: The structure of a chromium alloy containing 34.4 wt % Ni was investigated by methods of electron-microscopy of thin foils and X-ray and metallographic analyses, after being subjected to various thermal and thermo-mechanical treatments. The investigation data are compared with mechanical bending test data and analyzed from the standpoint of dislocation concepts and ideas of the character of the electronic structure of transition metals. Reference is made to microphotographs of the structure of the hardened alloy Cr - 34.4 Ni and its structural changes resulting from annealing at different temperatures and to diagrams showing effects of annealing at 930°C on mechanical properties, lattice parameter, hardness, and relative quantities of α- and γ- phases. The probability is indicated of increasing the strength

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USSR

KARSANOV, G. V., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct
71, pp 67-74

characteristics of the investigated alloy at the expense of precipitation
strengthening. Five illustr., 12 biblio. refs.

2/2

- 19 -

USSR

UDC 535.37

POPECHNITS, V. I., SARZHEVSKIY, A. M., SEVCHENKO, A. N., Academician of the
Belorussian SSR Academy of Sciences, Belorussian State University imeni
V. I. Lenin

"Concerning the Spectral Dependence of the Quantum Yield of Fluorescence of
Solutions"

Abstract: On the basis of the theory of universal intermolecular reactions
with certain assumptions relative to the variation, with time, of the
quantum yield in the presence of extinction of the second kind, the authors
derive a general equation which describes the relative quantum yield as a
function of fluorescence light frequency. The special case of fluorescence
extinction by impurities is considered.

1/1

USSR

UDC: 535.37

SEVCHENKO, A. N., Academician of the Academy of Sciences of the BSSR,
BUROV, L. I., VOROPAY, Ye. S., ZHOLNEREVICH, I. I., SARZHEVSKIY, A. M.,
Belorussian State University imeni V. I. Lenin

"Polarization Curves of Fluorescence Induced by Two-Photon Excitation"

Abstract: An expression is derived for the degree of polarization of
fluorescence in the case of excitation by two linearly polarized light
beams with arbitrarily oriented polarization vectors. The resultant
expression can be used not only to calculate the degree of polarization
of fluorescence for different orientations of the wave vectors and the
vectors of polarization of the exciting fluxes but also to obtain information
on the states participating in two photon absorption. Expressions are tabu-
lated for the degree of fluorescence polarization as a function of the
angle between the polarization vectors of the incident light beams with
oblique recording of fluorescence. Polarization curves plotted from the
expressions can give an idea of the kinds of oscillators taking part in
processes of absorption and emission.

1/1

USSR

POPECHITS, V. I., KOZLOV, I. N., SARZHEVSKIY, A. M., SEVCHENKO, A. N.

"Investigation of the Effect of Temperature and Viscosity of a Solution on Concentration Depolarization of Fluorescence"

Abstract: The influence of the temperature and viscosity of a solution on concentration depolarization of fluorescence is theoretically studied on the basis of an examination of diffusion of fluorescing molecules. The computation is based on the "active sphere" model of Jablonski's theory (Acta Phys. Polon., Vol 14, 1955, p 295; Vol 17, 1958, p 481). Formulas are found for the anisotropy of emission as a function of concentration, temperature, and viscosity of the solution; these formulas are compared with Jablonski's formulas for stable solutions. This comparison is used as a basis for evaluating the influence of diffusion on the anisotropy of fluorescence emission. The theoretical relations are checked out on a high-precision photoelectric unit. Some of the causes of discrepancies between theory and experiment are discussed.

CSO: 1862-W   - END -

1/1

UNCLASSIFIED

TITLE--EXTENT OF POLARIZATION ACCORDING TO THE FLUORESCENCE AND ABSORPTION
SPECTRA OF ANTHRACENE DERIVATIVES -U-

PROCESSING DATE--13NOV70

AUTHOR-(03)-SIVACH, L.N., SARZHEVSKIY, A.M., KHOMICH, M.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 608-10

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUORESCENCE SPECTRUM, ANTHRACENE, GLYCEROL, BUTANOL, ETHANOL,
LOW TEMPERATURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2021

STEP NO--UR/0048/70/034/003/0608/0610

CIRC ACCESSION NO--AP0125609

UNCLASSIFIED

CIRC ACCESSION NO--AP0125609
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRA OF 2,ACETYL,
   ANTHRACENE (I), 9,10,DIPROPENYLANTHRACENE, AND SEVERAL OTHER ANTHRACENE
   DERIVS. IN GLYCEROL, ISO BUOH, AND ETOH IN A WIDE TEMP. RANGE WERE
   MEASURED, AND THE POLARIZATION P WAS ESTD. AS A FUNCTION OF FREQUENCY.
   THUS, IN COOLING A SOLN. OF I, THE EXTENT OF POLARIZATION AT THE SHORT
   WAVE SIDE OF THE FLUORESCENCE SPECTRUM INCREASED FASTER COMPARED WITH
   THE LONG WAVE FLUORESCENCE COMPONENT. THE MAX. POLARIZATION OF I WAS
   REACHED AT MINUS 30DEGREES IN GLYCEROL BUT ONLY AT SMALLER THAN MINUS
   90DEGREES IN BUOH. THE INTERACTION OF THE FLUORESCING MOL. WITH THE
   MEDIUM AT DIFFERENT TEMPS. IS DISCUSSED. THE EFFECT OF INTRAMOL.
   VIBRATIONS ON P IN THE ANTHRACENE DERIVS. COULD BE VERIFIED FROM
   POLARIZATION STUDIES IN THE LONG WAVE ABSORPTION BAND OF I IN GLYCEROL.
         FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED

1/2   027
TITLE--CALCULATION OF LUMINESCENCE DEPOLARIZATION DURING CHANGES IN
    TEMPERATURE AND CONCENTRATION OF FLORESCENT SUBSTANCES --U-
AUTHOR-(03)-SEVCHENKO, A.N., POPECHITS, V.I., SARZHEVSKIY, A.M.

UNCLASSIFIED   PROCESSING DATE---20NOV70

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 19(15), 1025-7

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DEPOLARIZATION, TEMPERATURE DEPENDENCE, POLARIZED
    LUMINESCENCE, MOLECULAR STRUCTURE, FLUID VISCOSITY, EXCITATION ENERGY,
    LUMINESCENCE QUENCHING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1638

CIRC ACCESSION NO--AT0133543

STEP NO--UR/0020/70/191/005/1025/1027

UNCLASSIFIED

CIRC ACCESSION NO--AT0133543   UNCLASSIFIED   PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VAVILOV'S FORMULAS FOR CONCN. DEPOLARIZATION OF FLUORESCENCE (CA 45: 453H) ARE MODIFIED TO INCLUDE AS VARIABLES TEMP. AND VISCOSITY. THE BASIC ASSUMPTIONS FOR THE DERIVATION OF THE FORMULAA ARE: (1) THE FLUORESCENT MOLS. FOLLOW THE EINSTEIN-SMOLUCHOWSKI'S THEORY; (2) THE FLUORESCENT MEDIUM HAS 2 TYPES OF FLUORESCENT MOLS. DEPENDING ON THEIR THERMAL STATE, ORIENTATION, ETC.; (3) EXCITATION ENERGY TRANSFER BETWEEN MOLS. OF EQUAL STATES DOES NOT LEAD TO QUENCHING. EXPLICIT FORMULAS ARE GIVEN FOR: (1) CASES WHERE THE QUENCHING IS NEGLIBLE (LOW CONCN.), AND (2) DECREASE IN FLUORESCENCE POLARIZAITCN TAKES PALCE IN THE COURSE OF QUENCHING. FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED

1/2   018

UNCLASSIFIED

TITLE--DICHROISM AND OSCILLATOR ORIENTATION IN MOLECULES OF ANTHRACENE
DERIVATIVES -U-

AUTHOR-(02)-SARZHEVSKIY, A.M., KHOMICH, M.I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1969, 13(12), 1070-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR STRUCTURE, ANTHRACENE, ABSORPTION BAND SPECTRUM, UV
SPECTRUM, POLYTETRAFLUOROETHYLENE, VINYLIDENE RESIN, ELECTRON
OSCILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1137

STEP NO--UR/0250/69/013/012/1070/1072

CIRC ACCESSION NO--AT0119991

PROCESSING DATE--23OCT70

UNCLASSIFIED

CIRC ACCESSION NO--AT0119991   UNCLASSIFIED   PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DICHROISM AND POLARIZATION
SPECTRA WERE STUDIED OF THIN LAYERS OF POLY
(TETRAFLUOROETHYLENE),POLY(VINYLIDENE CHLORIDE) COPOLYMER ACTIVATED BY 1
AND 2,ACETYLANTHRACENES (I AND II, RESP.),1,4,DIMETHYL,ANTHRACENE (III),
9,10,DIALLYLANTHRACENE (IV), AND 2,(ALPHA,HYDROXY,ETHYL)ANTHRACENE (V).
THE ABSORPTION BANDS WERE COMPARED IN THE NEAR UV REGION, WHICH HAVE THE
LONGEST AND SHORTEST WAVE LENGTHS. FOR III AND IV, THE DICHROISM IS
NEG. AND POS., RESP., IN THE EXCITATION OF THESE BANDS AND THE
FLUORESCENCE POLARIZATION IS POS. AND NEG., RESP. THE DICHROISM HAS LOW
POS. VALUES IN THE LONG WAVE BANDS OF I AND V. THE SHORT WAVE
OSCILLATOR IS ORIENTED ALONG THE LONGITUDINAL AXIS OF THE MOL. AND THE
LONGWAVE ONE, AS WELL AS THE OSCILLATOR OF THE EMISSION, IN A DIRECTION
PERPENDICULAR TO IT. THE ORIENTATION OF THE MOLS. OF THE ANTHRACENE
DERIVS. IN THE POLYMER LAYERS IS SUPPOSED TO BE PARALLEL WITH THE AXIS
OF THE LAYER EXTENSION. A STRONG INTERACTION BETWEEN THE PI ELECTRONS
OF THE RING SYSTEM AND THOSE OF THE SUBSTITUENT OCCURS IN THE MOL. OF
II. THE DICHROISM HAS A MAX. VALUE AT 350 NM, WHERE THE POLARIZATION
SPECTRUM HAS A MIN. THE OSCILLATORS OF BOTH SHORT WAVE AND LONG WAVE
BANDS ARE ORIENTED ALONG THE TRANSVERSE AXIS OF THE II MOL.
FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED

USSR

Welding

UDC: 621.791.019

MAKARA, A. M., GORDONNYY, V. G., DIBETS, A. T., SARZHEVSKIY, V. A.,
PARFESSA, G. I., Institute of Electric Welding imeni Ye. O. Paton

"Remelting of High-Strength Steels as a Means of Increasing the Resistance
to the Formation of Cold Cracks During Welding"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 73, pp 1-5.

Abstract: One method of improving the properties of high strength structural
steels is refining of the initial metal, i.e., decreasing the content of
harmful impurities, gasses, nonmetallic inclusions, and improvement of the
initial structure of the metal. The use of electric-slag and cathode-ray
remelting can significantly improve the ductility and toughness of the
remelted steel by decreasing the content of sulphur, phosphorus, oxygen,
nitrogen, hydrogen and nonmetallic inclusions. Following refining remelting,
the resistance to the formation of cold cracks near a welded seam in type
35Kh2N2M and 42Kh2GSNM steels is increased by 50-60%.

1/1

USSR

UDC: 621.791.011

GORDAN', G. N., DZYKOVICH, I. Ya., MAKARA, A. M., MOSEÑOZ, N. A., and
SARZHEVSKIY, V. A.

"High-Temperature Chemical Inhomogeneity in the Weld-Affected Zone"

Abstract: An analysis is presented of regularities in the development of
high-temperature chemical microinhomogeneities on heating specimens of heat-
resistant steels. The heating was carried out in welding thermal cycles to
temperatures observed in the weld-affected zone of real welds. The steels
involved were 30KhGSNA, 42Kh2GSNMA, 28Kh3SNMVFA, and others. The specimens
measured 5 x 5 mm. The magnitude of the chemical inhomogeneity formed on
high-temperature heating of rolled steels.   the inhomogeneity of
the weld-affected zone of real welds appear to be comparable to that of a
dendritic inhomogeneity which generally develops in the crystallization of
welds and ingots of a similar composition. The formation of a chemical
inhomogeneity along the grain boundaries on high-temperature heating of
steels, and the redistribution and the changes in the shape of the
nonmetallic
1/2

USSR

GORDAN', G. N., et al, Fizika i Khimiya Obrabotki Materialov, no 6, Nov-Dec 70, pp 114-119

inclusions have an adverse effect on the properties of the weld-affected area adjoining the weld promoting the generation and propagation of micro cracks.

2/2

1/2   -014

TITLE--THERMAL STABILITY OF HEXATHIOCYANATOSCANDATES OF THE ALKALI METALS
-U-

UNCLASSIFIED

PROCESSING DATE--13NOV70

AUTHOR-(04)-GULIA, V.G., KOMISSAROVA, L.N., KRASNOYARSKAYA, A.A., SAS,
T.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 966-71

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL STABILITY, THIOL, DEHYDRATION, SCANDIUM COMPOUND,
LITHIUM COMPOUND, SODIUM COMPOUND, POTASSIUM COMPOUND, CESIUM COMPOUND,
RUBIDIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/2034

STEP NO--UR/0078/70/015/004/0966/0971

CIRC ACCESSION NO--AP0132291

UNCLASSIFIED

CIRC ACCESSION NO--AP0132291   UNCLASSIFIED   PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STABILITY OF M SUB3 (SC(NCS)
SUB6).NH SUB2 O (I) INCREASED WITH M IN THE ORDER: M EQUALS LI LESS
THAN NA LESS THAN K LESS THAN RB LESS THAN CS. DEHYDRATION OF I (M
EQUALS LI) WAS ACCOMPANIED BY DECOMPN. WHILE I (M EQUALS NA, CS, OR NH
SUB4 PRIME POSITIVE) FORMED ANHYD. COMPLEXES. DTA DIAGRAMS OF THE
COMPLEXES AND THEIR THERMAL DECOMPN. SCHEMES ARE GIVEN.   SC SUB2 O SUB3
AND M SUB2 SO SUB4 ARE THE FINAL DECOMPN. PRODUCTS OBTAINED.
FACILITY: MOSK. GOS. UNIV. IM. LOMONOSIVA, MOSCOW, USSR.

UNCLASSIFIED