19750422

AA0040746

TITLE--SIMPLIFIED METHOD FOR DETERMINING THE SENSITIVITY OF THE
FRACTIONATING COLUMN ZONE TO REGULATION -U-

AUTHOR-(03)-AIKHNO, S.I., KUPTEV, G.P., ZYKOV, D.D.

COUNTRY OF INFO--USSR

SOURCE--KOKS KHIM. 1970, (5), 42-5

DATE PUBLISHED------70

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

TOPIC TAGS--AUTOMATIC CONTROL, AUTOMATIC CHEMICAL PROCESS CONTROL,
FRACTIONATION, BENZENE, CARBON DISULFIDE, TOLUENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0101   STEP NO--UR/0068/70/000/005/0042/0045

CIRC ACCESSION NO--AP0132394
UNCLASSIFIED

CIRC ACCESSION NO--AP0132394
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   FOR MIXTS. IN WHICH 2 COMPONENTS
PRECOMINATED, TEMP. RANGES CORRESPONDING TO ZONES OF MAX. SENSITIVITY TO
AUTOMATIC CONTROL IN FRACTIONATING COLUMNS WERE DETD. FROM MAX. IN PLOTS
OF CONCN. DIFFERENCES DELTA EQUALS Y MINUS X OF THE LOW BOILING
COMPONENT IN THE VAPOR AND LIQ. PHASES AGAINST TEMP. T.   THESE ZONES
(FOR MIXTS. CONTG. MAINLY CS SUB2,C SUB6 H SUB6, C SUB6 H SUB6,PHME, AND
PHNE,HE SUB2 C SUB6 H SUB4) WERE BROADER THAN THOSE CALCD. (T EQUALS
54.5-71.5LEGREES, 88-103DEGREES, AND 118-32DEGREES, X EQUALS 0.65-0.17,
0.66-0.18, AND 0.67-0.19).   THE CALCD. RANGES FOR THE MOST SENSITIVE
PLATE WERE T EQUALS 60-4DEGREES, 93-7DEGREES, AND 123-7DEGREES, AND X
EQUALS 0.48-0.36, 0.47-0.34, AND 0.48-0.34.   FACILITY:
BAGLEISKII KOKSOKHIM. ZAVOD, USSR.

Acc. Nr. __AP0041857__ Abstracting Service: Ref. Code
                        CHEMICAL ABST.   UR 0366

89923k Configuration inversion of meso-dibenzylaminosuc-
cinic acid. Mikhno, S. D.; Kulachkina, N. S.; Berezovskii,
V. M. (Vses. Nauch.-Issled. Vitamin. Inst., Moscow, USSR).
Zh. Org. Khim. 1970, 6(1), 81-4 (Russ). The reaction of ClCO₂-
Et with mesodibenzylaminosuccinic acid (I) in the presence of
Na₂CO₃ at −5° gave 5.5:1 mixt. of DL-N-carbethoxydibenzyl-
aminosuccinic acid (II) and bis(N-carbethoxybenzylamino)suc-
cinic acid (III). The reaction of SOCl₂ with II gave II anhydride
(IV) which was converted by heating at 200° into trans-4,5-di-
carboxy-N,N'-dibenzyl-2-imidazolidinone anhydride (V). Heat-
ing II or III at 200° also gave V. The hydrolysis of IV gave II.
Thus, the inversion of configuration occurs during the reaction
of I with ClCO₂Et. The resolution of II with L-(+)-threo-1-
(p-nitrophenyl)-2-amino-1,3-propandiol sulfate gave (+)-threo-
II analog acid (−)-threo-II analog. The configuration of V was
shown by comparison with the known cis-V isomer (U.S.
2,489,232, 1951). Heating V gave trans-4,5-dicarboxy-N,N'-
dibenzyl-2-imidazolidinone monobenzamide.   CPJR

REEL/FRAME
19751738

Pesticides

USSR

BYSTROVA, YE. I., and MIKHNO, T. G.

"Effect of Isopropyl-1 Phenylcarbamate, Isopropyl N-(3-Chlorophenyl)carbamate and Chloroacylate on the Growth of Seeds and the Isolated Organs of Seeds of Wheat"

V sb. Khim. sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp. 1, Moscow, 1970, pp 247-252 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N449)

Translation: The authors determine the relative sensitivity to isopropyl phenylcarbamate, isopropyl N-(3-chlorophenyl)carbamate and "chloroacylate" (0-butyryl-N-carboisopropoxy-N-chlorophenyl-hydroxylamine) of wheat seed, isolated wheat germ, isolated upper buds ("isolated sprouts"), the isolated zone of rudimentary roots of the germ ("isolated first-stage roots"), and root tips of three-day seedlings ("isolated second-stage roots"). The sequences in which the seeds and their isolated organs are arranged with respect to sensitivity to the three herbicides were experimentally determined. In the experiments with isolated sprouts, the least sensitive to all three herbicides were the buds, and the most sensitive were germs. Seeds occupied an intermediate position with respect to sensitivity in experiments with isopropyl phenylcarbamate, but were as sensitive as the sprouts to isopropyl N-(3-

1/2

USSR

BYSTROVA, YE. I., and MIKHNO, T. G., V ab. Khim. sradstva zashchdty rast.,
Vyp 1, Moscow, 1970, pp 247-252

chlorophenyl)carbamate and"chloroacylate." Root parts and seeds followed
this arrangement of increasing sensitivity to the carbamates: wheat germ >
isolated second-stage roots > seeds > isolated first-stage roots. The
order was different in experiments with "chloroacylate": isolated
second-stage roots > wheat germ > isolated first-stage roots > seeds.

2/2

Analytical Chemistry

MIKHNO, V. V. and LEVITS'KA, G. K., Zaporozh'ye Medical Institute, Zaporozh'ye

"PAPER Electrophoresis for the Determination of Galantamine and Securinine in Forensic Chemical Investigations"

Abstract: Procedures were developed for the quantitative determination by paper electrophoresis of galantamine and securinine in solutions of the hydrobromide and nitrate, respectively, and solutions obtained by extracting with oxalic acid biological material treated with solutions of these alkaloids. The optimum conditions for electrophoresis were use of 2M formic acid as an electrolyte, pH 2, a potential of 300 V, and a current strength of 0.64-0.72 mA per 1 cm of the paper strip. Dragendorff's reagent was used for identifying the alkaloids on the electrophoretogram. Because the length of the path of the alkaloids differed, it would be possible to determine both of them in a mixture of the two. On elution of the alkaloids from the electrophoretogram with 0.1 N HCl, their content was determined spectrophotometrically. The absorption maximum was a 289 and 256 nm for galantamine and securinine, respectively. Beer's law applied at 10-100 gamma/ml for galantamine and 0.2-20 gamma/ml for securinine.

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1/2   027   UNCLASSIFIED   PROCESSING DATE--27NOV70

TITLE--DISTRIBUTION OF GALANTHAMINE AND SECURININE IN THE ORGANS OF
    POISONED ANIMALS -U-

AUTHOR-(02)-MIKHNO, V.V., KRAMARENKO, V.F.

COUNTRY OF INFO--USSR

SOURCE--FARM. ZH. (KIEV) 1970, 25(1), 68-71

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DOG, ALKALOID, TOXICOLOGY, LIVER, KIDNEY, STOMACH, POISON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0143   STEP NO--UR/0491/70/025/001/0068/0071

CIRC ACCESSION NO--AP0135640
                              UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0135640
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO GROUPS OF 4 DOGS EACH WERE
   POISONED WITH 100 MG-KG BODY WT. OF GALANTHAMINE (I) HBR AND SECURININE
   (II) NITRATE. DOGS DIED 1.5-2 HR AFTER ADMINISTRATION OF THE ALKALOIDS.
   THE DISTRIBUTION OF I AND II WAS THEN EXAMD. IN THE INTERNAL ORGANS,
   BLOOD, EXCREMENTS, AND VOMITED MASS. THE ALKALOIDS WERE EXTD. WITH A H
   SUB2 SO SUB4 SOLN. OF PH 2.5 AND DETD. BY KNOWN PROCEDURES. THE HIGHEST
   LEVEL OF BOTH ALKALOIDS WAS DETECTED IN VOMITED MASS AND URINE. SMALLER
   AMTS. OCCURRED IN STOMACH, INTESTINE, LIVER, KIDNEYS, BRAIN, HEART, AND
   LUNGS. UNLIKE II, I WAS ALSO DETECTED IN BLOOD. IT IS CONCLUDED THAT
   FOR TOXICOL. EXAMN. THE MOST SUITABLE OBJECTS ARE VOMITED MASS, STOMACH
   WITH ITS CONTENTS, LIVER, KIDNEYS, AND URINARY BLADDER WITH UREA.
   FACILITY: LVOV MED. INST., LVOV, USSR.

UNCLASSIFIED

USSR

BALTAKOV, F. N., BARIKHIN, B. A., KORNILOV, V. G., MIKHNOV, S. A.,
RUBINOV, A. N., and SUKHANOV, L. V.

"Pulse Laser Using 6Zh Rhodamine Solution in Ethyl Alcohol with a
Radiation Energy of 110 Joules"

Abstract: The laser described in this paper is pumped by a special
lamp and uses a reflector space filled with MgO powder. Length of
the ring-shaped discharge space is 45 cm, with a gap of 1 cm, and
the space is filled with xenon at a pressure of 10 torr. A cross
section of the laser as well as a cross section of the vessel serv-
ing as the inner wall of the laser are shown in diagram form. A
filter of NaCOOCH$_3$ was used to absorb ultraviolet light shorter than
230 nm and thus weaken the tendency to decay of the 6Zh rhodamine
solution under light, with resultant increase in radiational energy.
Curves are plotted for the current and voltage of the pumping pulse
and the oscillation pulse as functions of time. The brightness
temperature of the discharge was computed at about 20,000° K. The
wavelength of the radiation generated was 590 nm and the width of
the oscillation line 20 nm. The authors are associated with the
Physics Institute of the Belorussian Academy of Sciences at Minsk.

1/1

UDC 621.378.525

USSR

GORCHAROV, V.K., MIN'KO, L.YA., MIKHNOV, S.A., STRIZHNEV, V.S.

"Peculiarities Of The Effect Of Emission Of Rhodamine Laser On Absorbing Materials"

Kventovaya elektronika, Moscow, No 5, May 71, pp 112-116

Abstract: A study is conducted of the damaging action on absorbent materials of emission generated by a laser based on a standard solution of Rhodamine-6 Zh. Generation excitation was accomplished by two series-connected IFP-2000 lamps located in a magnesium oxide cylindrical illuminator. A battery of IM-50-3 capacitors with a capacitance of 36 microfarad at a voltage of $\sim$ 10 kv was used for energy storage. The duration of the pumping pulse was 120 microsec (at a 0.1 level). An energy output of 12 joule with a generation duration of $\sim$ 55 microsec was assured. The maximum flux density of the emission amounted to $3 \cdot 10^6$ watt/cm². As a result of the action a quasistationary ultrasonic plasma jet   is formed with a relatively large angle of emergence. In it a stationary shock wave is formed, the configuration of which is determined by the geometry of the jet's   emergence and has a dome-shaped form. With the aid of high-speed spectral filming it is established that excitation of the spectrum primarily takes place in the stationary shock wave. A discontinuous

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USSR

GORCHAROV, V. K., et al., Kvantovaya elektronika, Moscow, No 5, May 71, pp 112-116

structure of the plasma jets is displayed, probably resulting from the explosion-formed (volumetric) character of vaporization. The recurrence frequency of the individual microbunches during laser action on lead (or tin-lead solder) amounts to ~ 1 KHz (the flux density of the emission is $\sim 3 . 10^{5}$ watt/cm^2). The exhaust velocity of the plasma jet was measured. Pressure in the zone of action is evaluated. Some peculiarities of the action on the absorbing material are studied. Received by editors, 20 Apr 71. 2 fig. 13 ref.

2/2

USSR   UDC 621.375.8

BUSHAK, B. A., MIKHNOV, S. A., RUBINOV, A. N.

"Frequency-Tunable Dye Laser with Double Light Pulse Pumping"
(Brief Communication)

Minsk, Zhurnal Prikladnoy Spektroskopii (Journal of Applied
Spectroscopy), Vol 15, No 4, Oct 71, pp 732-734

Abstract: The laser studied had a rhodamine solution in a double
walled quartz tube. The diameters of the vessel were 3 and 10
mm. An aqueous solution of sodium nitrite was pumped through the
outer tube to serve as a coolant and to filter out the ultraviolet
from the pumping light. During operation, the filter protected
the active solution, which was pumped through the inner tube at
the rate of 4 m/sec. The electrical circuit is shown in a figure.
The first pulse ignites the lamps, and the second, shifted by 40
to 90 microsec, triggers the discharge from a capacitor bank.

A Fabry-Perot interferometer in the resonator or a diffraction
grating in place of one of the mirrors narrows the emission band
and can be used to tune the output frequency. Turning the inter-
ferometer varies the output smoothly from 599 to 579 nm for any
1/2

USSR

BUSHAK, B. A. et al, Zhurnal Prikladnoy Spektroskopii, Vol 15,
No 4, Oct 71, pp 732-734

pulse repetition frequency up to 30 Hertz, the upper limit of
the experimental circuitry.

Experiments at 10 to 15 Hertz showed that beam divergence does
not exceed 2×10^{-3} rad. The interferometer has no effect when
tuned to the peak emission, but tuning to one side or the other
increases the generation threshold and decreases the divergence
of the beam.

Orig. art. has 3 figs. and 2 refs.

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- 118 -

USSR   *M*   UDC 621.391.82:621.317.743

MIKHNOVICH, B. P.

"Correction Device in a Measuring Circuit When Measuring Periodic Magnetic
Fields of Nonsinusoidal Shape by Induction Sensors"

Sb. nauchn. tr. Uralskiy elektromekhan. in-t inzh. zh.-d. transp. (Collection
of Scientific Works. Urals Electromechanical Institute of Railroad Transpor-
tation Engineers), 1970, vyp. 27, pp 91-97 (from RZh-Radiotekhnika, No 9,
Sep 70, Abstract No 9A105)

Translation: This article contains a detailed calculation of a correction
device introduced into an induction sensor measuring circuit used in de-
termining the intensity of the magnetic fields of transformers, reactors
and other alternating current devices creating noise in the surrounding
area. The basis for the calculations is the necessity of exact correction
of the first and third harmonics having the greatest effect on the sensor
and approximate correction (with a defined approximation accuracy) for
other harmonics. Experimental investigation of the correction device used
to measure the odd harmonics (from the first to the 15th) gave complete
correspondence with the calculations.

1/1

Hematology

UDC 615.385.1

USSR

SHULUTKO, L. S., MIKHNOVICH, Ye. P., and ANTONOVA, Ye. V., Blood Preservation Laboratory, Blood Preparation Division, Leningrad Institute of Hematology and Blood Transfusion

"Use of Gelatinol in Erythrocyte Transfusion Fluids Employed in Extracorporeal Circulation"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol. 15, No 9, Sep 70, pp 57-59

Abstract: Changes in transfusion fluids containing a suspension of erythrocytes in gelatinol with a low calcium content were investigated after varying periods of storage and after recirculation in an ISL-2 apparatus. Among the indices studied were pH; osmotic pressure of the erythrocytes; content of labile phosphorus in ATP; content of free hemoglobin, potassium, and inorganic phosphorus in the liquid part of the medium; content of formed elements and morphological changes in the erythrocytes. According to these indices, plasma-substitute erythrocytes can be stored for 5 to 7 days without deterioration. After 48 hours' storage, the erythrocytes showed marked resistance to mechanical and other factors involved in the operation of the ISL-2.

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1/2   017   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--BICYLIC NAPHTHENES, C SUB8-9, IN PETROLEUMS OF THE DAGADZHIK AND
  GRYAZEVAYA SOPKA DEPOSITS -U-
AUTHOR-(03)-SOLODKOV, V.K., MIKHNOVSKAYA, A.A., PETROV, A.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK TURKM. SSR, SER. FIZ-TEKH., KHIM. GEOL. NAUK 1970,
  (2), 99-105
DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--AROMATIC NITRO COMPOUND, CHEMICAL COMPOSITION, PETROLEUM
  DEPOSIT, GEOGRAPHIC LOCATION, ADSORPTION, ISOMERIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1708   STEP NO--UR/0202/70/000/002/0099/0105

CIRC ACCESSION NO--AP0138692
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0138682
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BICYLIC C SUBB-9 NAPHTHENES
   COMPRISING 5.2 AND 16.5PERCENT OF DAGADZHIK AND GRYAZEVAYA SOPKA
   PETROLEUMS WERE SEPD. FROM FRACTIONS B. 120-60DEGREES BY SUCCESSIVE
   ADSORPTION ON SILICA GEL AND THERMAL DIFFUSION.   IN THE RESP.
   PETROLEUMS THE C SUB8 BICYCLIC NAPHTHENES WERE: (SHOWN ON MICROFICHE).
   IN EQUIL. MIXTS. FROM ISOMERIZING BICYCLO(4.3.0)NONANE THE CONTENT OF
   METHYLBICYCLO(3.3.0), METHYLBICYCLO(3.2.1.), AND
   METHYLBICYCLO(2.2.2)OCTANES CHANGED FROM 18.3, 60.8, AND 7.3 TO 39.1,
   38.6, AND 10.9 AS THE TEMP. WAS INCREASED FROM 35 TO 150DEGREES. AT
   150DEGREES THE CONTENT OF THE RESP. (SHOWN ON MICROFICHE).   THUS, THE
   PETROLEUM BICYCLIC NAPHTHENE WERE NOT EQUIL. MIXTS. AT ANY TEMP.
   FACILITY: INST. GEOL. RAZRAB. GORYUCH. ISKOP., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr.: _AM0104084_   Ref. Code: _4R0000_

Glushkov, V. M.; Barabanov, A. A.; Kalinichenko, L. A.; Mikhnovskiy, S. D.;
Rabinovich, Z. L.

Computers With Developed Interpretation Systems (Vychislitel'nyye mashiny s
razvitymi sistemami interpretatsii) Kiev, 1970, 258 pp (NL:201?)

TABLE OF CONTENTS:

REEL/FRAME

19870477

1/2   035   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--KINETICS OF ELECTROLUMINESCENCE OF ALUMINUM OXIDE FILMS -U-

AUTHOR-(02)-IVANOV, V.F., MIKHO, V.V.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(4), 539-42

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION KINETICS, ELECTROLUMINESCENCE, ALUMINUM
  OXIDE, OXIDATION, ALUMINUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0138   STEP NO--UR/0185/70/015/004/0539/0542

CIRC ACCESSION NO--AP0135635
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0135635
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETICS OF QUENCHING OF
  LUMINESCENCE, GENERATED BY AN EXCITATION WITH PI CHARGE IMPULSES, WAS
  STUDIED ON AL OXIDE FILMS PREPD. BY ELECTROCHEM. OXIDN. OF AL IN AQ.
  OXALIC ACID SOLNS. THE RATE OF LUMINESCENCE QUENCHING DEPENDED ON
  EQUIL. OF EXCITATION STATE, THUS ON DISTRIBUTION OF ELEC. FIELD IN THE
  SAMPLE. KINETIC RESULTS AGREED WITH EXPTL. SPECTRAL DISTRIBUTION OF
  LUMINESCENCE AT CHANGING CONDITIONS OF EXCITATION.   FACILITY:
ODESS. GOSUNIV. IM. MECHNIKOVA, ODESSA, USSR.

UNCLASSIFIED

USSR

KASATKIN, B. S., MINEYEV, E. A., MUSIYACHENKO, V. F., and NIKHONUY, L. I.,
Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences UkrSSR

"Certain Fewtures of the Design and Manufacture of High-Strength Welded Construc-
tions"

Abstract: Basic types of welded joints and assemblies for high-strength steel
structures, e.g., skips for hauling coal, are considered. Sketches of welded
joints and assemblies made of St 3 and 14Kh2GMR steels are shown. An analysis
is made of construction mistakes, and recommendations are made to avoid their
repetition. Fifteen skips manufactured from 14Kh2GMR steel are being used suc-
cessfully in the Donbass mines. Skip weight has been reduced by 28 to 35%.

1/1

USSR

UDC 621.791.756.856:669.15-194

KASATKIN, B. S., MUSIYACHENKO, V. F., MIKHODUY, L. I., Electric Welding Institute imeni Ye. O. Paton and BULGAKOV, A. S., Uralmashzavod imeni S. Ordzhonikidze

"Welding Low-Alloy, Highly Durable Steels 14Kh2GMR and 14KhMNDFR"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 70, pp 39-42

Abstract: The steels referred to in the title 14Kh2GMR and 14KhMNDFR were designed for various types of welded structures: bridges, high-pressure vessels, storage tanks, hydraulic equipment, transport lifting mechanisms, trucks, railroad cisterns, and the like. The purpose of the article is to recommend rational choices of welding materials, welding modes, and special technical operations to guarantee that a union of the two metals will have the same durability of the basic metals and that it will be sufficiently resistant to cold. The following welding features are discussed: electrodes, flux and wire, measures for preventing crack formation and welding modes. Illustrations include a drawing showing tests for determining the tendency of welding seams to crack, a schematic of a pneumatic tensometer for determining transverse specimen deformations, and a diagram of transverse deformations in 14Kh2GMR steel during and after welding. A table of recommended preliminary heating temperatures for the two types of steel mentioned in the title is included.

1/1

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USSR

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BUDAGOV, YU. A., VINOGRADOV, V. B., VOLOD'KO, A. G., DZHELEPOV, V. P., KIRILLOV-
-UGRYUMOV, V. G., KLADNITSKIY, V. S., KUZNETSOV, A. A., LOMAKIN, YU. F., MEL'NIKOVA,
N. N., PONOSOV, A. K., FLYAGIN, V. B., SHLYAPNIKOV, P. V., MARTINSKA, G.(1),
BOLDEA, V. (2), MIKHUL, A. (2), MUMUYANU, D. (2), PONTA, T. (2), FELEA, S. (2),
and CHADRAA, B. (3), Joint Institute of Nuclear Research; (1) University imeni P.
I. Shafarik, Koshitse, Czechoslovak SSR; (2) Institute of Atomic Physics, Bucharest,
Romania; (3) Physics Institute of the Academy of Sciences Mongolian People's Repub-
lic, Ulan-Bator

"Study of the Mass Spectrum of a ΛK-System in π^-p-Interactions at 4 and 5.1 Gev/c"

Abstract: The results of a study of the spectrum of the effective masses of a
ΛK-system are reported. The spectrum was obtained in investigating π^-p-interactions
in a 24-liter and a 1-meter propane bubble chamber irradiated in π-meson beams of
the proton synchrotron of the Joint Institute of Nuclear Research with pulses of
4 and 5.1 Gev/c, respectively. An investigation of the structure of the effective
mass spectrum of a ΛK-system was of interest from the viewpoint of observing new

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USSR

resonances with zero strangeness and the decays of different inobars via the chan-
nel $N^* \to \Lambda + K$, to determine the relative probabilities of these decays. Approxi-
mately 230,000 photographs were analyzed for each bubble chamber. The effective
mass spectra of ΛK^0 combinations for events in which the decays of a Λ-hyperon and
a K^0-meson were simultaneously recorded in the chamber are graphed. The graphs
show a considerable excess in the number of events above the background in the mass
region 1.61-1.96 Gev/c^2. It is shown that this anomaly is not associated with the
reflection of known resonances Y^* (1385) and K^* (890) in the ΛK^0-spectrum. The
total excess in the number of events over the background in the mass interval 1.61-
-1.96 Gev/c^2 was 114 ± 13. The experimental data verify the existence of two reso-
nances with masses about 1685 and 1935 Mev/c^2 and widths of the order of 150 Mev/c^2.
It is concluded that the anomaly observed in the effective mass spectrum of ΛK can
be explained only by the decay of the isobar S_{11} (1710), P_{11} (1750) via the channel
$N^* \to \Lambda + K$ or by the existence of a new resonance with mass about 1685 Mev/c^2, as
the data of R. Erbe et al indicate.

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USSR

(3).

TROPIN, B. P., BEZUGLYY, S. F., BOROVIKOVA, L. N., GOLYSHIN, N. M., ZAIKIN, B. A., KRASNOVA, M. V., and MIKHULYA, S. A.

UDC 632.95

"Method to Decrease Evaporation of Pesticide Droplets"

Translation: In order to decrease evaporation of pesticide droplets during aerial application (from airplane), 0.1-5% of antievaporating agent is added to pesticide. A mixture consisting of high-molecular weight synthetic aliphatic alcohol fractions $C_{10} - C_{16}$, $C_{10} - C_{18}$, $C_{10} - C_{20}$, nonionogenic surface-active substances (OP-4, OP-7, OP-10) and calcium dodecylbenzene-sulfonate can be used as antievaporating agent. Example. 85-93% primary aliphatic alcohols $C_{10} - C_{16}$ or $C_{10} - C_{18}$, 7-15% OP-7 or OP-10 are mixed to prepare the antievaporating agent (AE). One part of antievaporating agent is emulsified with 2-3 parts of water, the obtained emulsion is mixed with a suspensoid containing 8 parts of finely-dispersed wetting agent of copper oxychloride (90% strength), and water is added to make 100 parts. The emulsion-suspensoid prepared in this manner is used for aerial spraying of

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USSR

TROPIN, B. P., et al., USSR Author's Certificate No 333913, filed 13 Oct 63, published 6 May 72

plants in the amount of 50 liters/ha. The fungicide layer on plants in this case is usually more dense than without the addition of AE. Data are presented on preparation of spraying mixtures consisting of different fungicides and insecticides with AE, as well as evaporation rates of different size of droplets with AE-3P and AE-4P and without them, both under laboratory and field conditions (spraying of sugar beets).

2/2

MIKINA, M. I.

SO: JPRS 54340
28 OCT 71

pp 1-9

PROMISING METHODS FOR WATER RECLAMATION IN SPACECRAFT LIFE SUPPORT SYSTEMS

Abstract: 1. This paper convincingly demonstrates the need for developing, regenerative life support systems, water regeneration from water-bearing wastes being the first and foremost step in their design and development. The selection of a particular water regeneration method is dependent on a complex functional relationship between the flight program, flight duration, spacecraft power supply, number of crew members, possibility of replenishing the food supply, weight and reliability of the life support system, etc. 2. An analysis of the sources of water-bearing wastes, mass flows, and their chemical composition demonstrates that most of the water can in fact be obtained using the separation technique...

Acc. Nr. A70103019   Abstracting Service: 6-70   Ref. Code:
INTERNAT. AEROSPACE ABST.   UR 0020

A70-25397 #   Estimation of the structure of the solar corona from a rocket experiment on February 15, 1961 (Otsenka struktury solnechnoi korony po raketnomu eksperimentu 15 II 1961 g.). A. A. Dmitriev, R. G. Indzhgia, A. Ye. Mikirov, and S. M. Poloskov (Moskovskii Gosudarstvennyi Universitet, Moscow, USSR). *Akademiia Nauk SSSR, Doklady*, vol. 190, Feb. 1, 1970, p. 803, 804. In Russian.

Determination of the brightness distribution in the outer solar corona from information obtained by rockets equipped with scanning devices during a solar eclipse. The problem of determining the true brightness from an integral equation giving the relation between the experimentally observed brightness and the true brightness is considered. It is found that, starting from a measurement error of 9.5%, the reconstructed function does not have any negative roots, thus reliably indicating that the error in the initial data is no less than 9.5%.

A.B.K.

REEL/FRAME
19861101

CK

- 1/2   018   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--LATE RESULTS OF RADICAL OPERATIONS IN CANCER OF THE LARGE   DUODENAL
   PAPILLA -U-
AUTHOR-(03)-SHABANOV, A.N., MIKIRTUMOV, S.M., DMITRIYEV, A.YE.

COUNTRY OF INFO--USSR   M

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 4, PP
   71-74
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CANCER, DUODENUM, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0039   STEP NO--UR/0589/70/104/004/0071/0074

CIRC ACCESSION NO--AP0105138
                            UNCLASSIFIED

2/2   018
CIRC ACCESSION NO--AP0105138
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   IN THE PAPER BASING ON THE STUDY
OF THE CLINIC AND COURSE OF 39 PATIENTS OPERATED UPON FOR TUMOR OF THE
MAJOR PAPILLA DUODENI, INCLUDING 21 PATIENTS TREATED RADICALLY WITH
SUBSEQUENT ANALYSIS OF THEIR LATE RESULTS, IT IS CONCLUDED THAT IN
LIMITED TUMORS OF THE DUODENAL PAPILLA NOT PENETRATING IN THE PANCREATIC
HEAD TRANSDUODENAL PAPILLECTOMY IS INDICATED, THAT IS IN AGREEMENT WITH
NEW CONCEPTIONS OF SURGICAL TECHNIC IN REMOVING MALIGNANT TUMORS (A. I.
RAKOV) DEFINING THE IDEA OF ANATOMICAL ZONES AND SHEATH LOCALIZATION OF
TUMOR.   ACCORDING TO THE AUTHORS' DATA TRANSDUODENAL PAPILLECTOMY IS
EFFECTIVE ENOUGH FROM THE POINT OF VIEW OF IMMEDIATE AND LATE RESULTS.
AN AVERAGE SURVIVAL RATE AFTER THE OPERATION WAS 3 YEARS.   MAXIMUM TERMS
OF OBSERVATION WERE 8 YEARS.   AT PRESENT THIS PATIENT, AGED 63 YEARS
OLD, IS STILL ENGAGED IN WORK AND FEELING WELL.   IT IS FELT THAT
EXTENSIVE PANCREATODUODENAL RESECTION INHERENT IN A GREAT RISK FOR
PATIENTS' LIFE SHOULD BE INDICATED ONLY IN TUMORS OF THE DUODENAL
PAPILLA INVADING THE PANCREATIC HEAD.   AN AVERAGE SURVIVAL RATE AFTER
PANCREATODUODENAL RESECTION WAS 1 YEAR AND 10 MONTHS.

1/2   029   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--USE OF CONSTRUCTIVELY SIMILAR MODELS FOR INVESTIGATING THE DYNAMIC
  PROPERTIES OF SPACECRAFT -U-
AUTHOR-(03)-MIKISHEV, G.N., STEPANENKO, B.G., AMINOV, V.R.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOSMICHESKIYE ISSLEDOVANIYA, VOL VIII, NO 3, 1970, PP
  329-340
DATE PUBLISHED-------70

SUBJECT AREAS--SPACE TECHNOLOGY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--STRUCTURE DYNAMIC STABILITY, MODEL, SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605017/EOI STEP NO--UR/0293/70/008/003/0329/0340

CIRC ACCESSION NO--AP0140747
                         UNCLASSIFIED

2/2   029
CIRC ACCESSION NO--AP0140747
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE POSSIBILITIES OF EXPERIMENTAL
METHODS FOR STUDYING THE DYNAMIC PROPERTIES OF SPACE VEHICLES ARE
EXAMINED; SPECIAL CONSTRUCTIVELY SIMILAR MODELS ARE ANALYZED. EMPHASIS
IS ON AN ANALYSIS OF SIMILARITY CRITERIA AND ON THE PECULIARITIES
INVOLVED IN DESIGNING, FABRICATING AND TESTING CONSTRUCTIVELY SIMILAR
MODELS. AS AN ILLUSTRATION OF THE EFFECTIVENESS OF SUCH EXPERIMENTAL
METHODS THE AUTHORS GIVE SOME RESULTS OF FREQUENCY TETS OF A
METHODOLOGICAL MODEL AND A MODEL OF THE VOSTOK CARRIER ROCKET AT A SCALE
OF 1:10. A PICTURE OF THE MODEL ACCOMPANIES THE TEXT. THE MODEL WAS
ABOUT 4 M LONG AND THE DIAMETER AT THE BASE WAS ABOUT 1 M. ALL
COMPONENTS OF THE MODEL DETERMINING ITS ELASTIC SYSTEM WERE FABRICATED
FROM THE SAME MATERIALS AS THE VOSTOK SHIP. THE ARTICLE WAS WRITTEN ON
THE BASIS OF MATERIALS COLLECTED DURING INVESTIGATIONS MADE BY THE
AUTHORS DURING 1958-1961. THE PAPER GIVES THE RESULTS OF CALCULATIONS
ON AN ELECTRONIC COMPUTER AND TESTS OF THE REAL SHIP.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE---30OCT70

1/2   033
TITLE--PECULIARITIES OF THE INTERPRETATION OF X RAY PHOTOGRAPHS OF
 AUSTENITIC STEELS -U-
AUTHOR-(05)-DOLGIY, A.A., VOLKOV, A.S., STAROSTIN, A.P., MIKITAS, A.P.,
 PANOV, A.YE.
COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SVARCCHNOYE PROIZVODSTVO, NO 3, 1970, PP 36-37

DATE PUBLISHED-------70

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

TOPIC TAGS--AUSTENITIC STEEL, BIBLIOGRAPHY, WELD DEFECT, X RAY TECHNIQUE,
 RADIOGRAPHIC JOINT INSPECTION, RADIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1316   STEP NO--UR/0135/70/000/003/0036/0037

CIRC ACCESSION NO--AP0123275
                    UNCLASSIFIED

2/2   033
CIRC ACCESSION NO--AP0123275
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   IT HAS BEEN ESTABLISHED THAT
APPARENT DARKENING OF THE FILM OBSERVED UPON X RAYING OF WELDS IN
AUSTENITIC STEEL ARE FREQUENTLY A RESULT OF THE OVERHEATING OF THE WELD
AND NOT THAT OF THE PRESENCE OF DEFECTS IN IT.

UNCLASSIFIED

USSR   UDC 613.644-07

DENISOV, E. I., and NIKITASOV, A. M., Institute of Labor Hygiene and
Occupational Diseases, Academy of Medical Sciences USSR

"Calculation of the Equivalent Intensity of Unstable Noise"

Abstract: A new formula is presented for determining the equivalent intensity
of unstable industrial noise on the basis of noise meter and time-and-motion
study data. The computations are reduced to simple arithmetic operations by
two tables provided. Different intensities experienced during a shift are
corrected with respect to time with the first table. These values then
undergo sequential paired summation with corrections specified by the
second table. Thus a single intensity value results. Table values are
designed for an 8-hour shift but can be corrected for use with other time
periods.

1/1

TITLE--SYNTHESIS OF COLORED POLYESTERS BASED ON 2,2,BIS 4,HYDROXYPHENYL
   PROPANE AND PHTHALIC ACIDS -U-

AUTHOR-(04)-SMIRNOVA, O.V., LAMM, V.N., MIKITAYEV, A.K., KOLESNIKOV, G.S.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(4), 313-16

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--INTERFACIAL POLYCONDENSATION, HYDROXYL RADICAL, NAPHTHALENE,
   AZO COMPOUND, CARBONATE, POLYESTER RESIN, PROPANE, COLOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0736   STEP NO--UR/0460/70/012/004/0313/0316

CIRC ACCESSION NO--AP0136175

CIRC ACCESSION NO--AP0136175
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COLORED (ORANGE) POLYESTERS WERE
  PREPD. BY INTERFACIAL POLYCONDENSATION IN C SUB2 H SUB2 CL SUB4 OF
  2,2,BIS(4,HYDROXYPHENYL)PROPANE, BIS(4,(2,HYDROXY,
  1,NAPHTHYLAZO)PHENYL)CARBONATE (I), AND TEREPHTHALOYL OR ISOPHTHALOYL
  CHLORIDES AT 20DEGREES. THE M.P. AND REDUCED VISCOSITIES OF BOTH
  POLYESTERS WERE DETD.   FACILITY: MOSK. KHIM.-TEKHNOL. INST. IM.
  MENDELEEVA, MOSCOW, USSR.

Semiconductors and Transistors

MIKITSEY, YA. I., PASHIN, YU. N., STRUKOV, I. A.

"Noise of Semiconductor Diodes in the Presence of a Microwave
Pulse"

Translation: The excess (over the thermal) noise radiation of
a semiconductor device under the effect of pulsed microwave power
was investigated. The investigation was conducted on germanium
diffused semiconductor diodes with a breakdown voltage of 18--
25 v and on silicon epitaxial semiconductor diodes with a break-
down voltage of 36 v. A highly-sensitive Dicke radiometer was
employed as a noise indicator. The experimental results showed
that the intensity of the excess noise radiation increases
linearly with an increase of the current flowing across the semi-
conductor diode. With a filling frequency /chastota zapolneniya7
1/2

USSR

MIKITSEY, YA. I., et al, Elektron. tekhnika. Nauchno-tekhn. sb.
Elektron. SVCh, 1970, Issue 10, pp 137-139

$f = 1.8$ GHz, a linear dependence of the noise power on the
magnitude of the pulse current was observed for all the semi-
conductor diodes investigated. 3 illustration, 4 references.
K.P.

2/2

USSR

UDC 619:616-073.537:576.851.49

RYAGIN, S. T., Professor, and NIKITYUK, P. V., Aspirant, Belotserkovskiy Agricultural Institute

"Identification of Clostridium botulinum by the Immuno Fluorescent Antibody Method"

Abstract: An attempt was made to identify all types of Cl. botulinum by using the indirect fluorescent antibody method of Weller and Coombs.

Dry antirabbit fluorescent serum anti-botulinus sera types A, B, C, D, and E, with comparatively high agglutinating characteristics were used.

Cl. botulinum specimens were labeled with fluorescent anti-species serum in dilation of 1:32, while control specimens were prepared in a variety of ways, for example with immune serum that did not contain any antibodies to the investigated antigens.

Specific luminescence, either bright green or medium green, was observed with all Cl. botulinum types studied. Luminescence was absent in control specimens.
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USSR

The fluorescent antibody method can be used for tentative identification of all types of Cl. botulinum in microscope preparations, but an additional neutralization reaction is necessary for identification of types A and B.

2/2

MIKK, E.A.

SPKS S/2003 L-73

SESSION V

V-1. STUDY OF THE PROCESS OF GROWTH OF EPITAXIAL LAYERS USING A DIGITAL COMPUTER

[author and publication line, illegible] A. A. Pirozhenko, Tallin, Kronthirsk, III Simposium po Protsessam Rosta i [...] Poluprovodnikovykh Kristallov i Plenok, Erunim, 12-17 June, 1972, p 50]

A study was made of the process of the deposition of an epitaxial layer from the gas phase as the object of control [...] the [...] the output parameter. Its characteristics can be determined by numerical solution of the substationary Navier-Stokes equations for a comparatively wide solution of the substationary Navier-Stokes equations for a comparatively wide using a digital computer. Such characteristics can be used both for designing epitaxial reactors and control systems and for optimizing the technological process.

The calculated characteristics of the growth processes of an epitaxial layer of silicon in a horizontal reactor are determined. Here, the reaction kinetics and the variation of the properties of the vapor-gas mixture $(H_2 + SiCl_4)$ are considered.

A comparison is made of the calculated and the experimental characteristics.

- 50 -

1/2   029   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--RADIANT HEAT TRANSFER IN A DUCT WITH VARIABLE TEMPERATURE OF
   RADIATING MEDIUM -U-
AUTHOR-(02)-MIKK, I., POMERANTSEV, V.

COUNTRY OF INFO--USSR

SOURCE--TALLINN, IZVESTIYA AKADEMII NAUK ESTONSKOY SSR, FIZIKA,
   MATEMATIKA, JANUARY-MARCH 1970, PP 100-103
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HEAT TRANSFER, APPLIED MATHEMATICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0091   STEP NO--UR/0458/70/000/000/0100/0103

CIRC ACCESSION NO--AP0125921
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0125921
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS
   GRAPHIC INFORMATION.   THIS ARTICLE CONCERNS THE PROBLEM OF RADIANT HEAT
   TRANSFER IN A STRAIGHT DUCT CONTAINING A MEDIUM WITH A ONE DIMENSIONAL
   TEMPERATURE FIELD ALONG THE DUCT. THE EQUATION OF THE DENSITY OF THE
   RESULTING HEAT FLOW SHOWN ON MICROFICHE IS DERIVED WITH THE ASSUMPTION
   OF ABSOLUTE BLACKENSS OF THE WALLS AT A TEMPERATURE OF ODEGREESK. IF
   THE MEDIUM IS GREY, NONDISSIPATING, AND HOMOGENEOUS, EQUATION (1) CAN BE
   EXPRESSED IN DIMENSIONLESS COORDINATES IN THE FORM SHOWN ON MICROFICHE.
   THE TEMPERATURE FIELD OF THE MEDIUM IS GIVEN AS BLACK BODY RADIATION
   DENSITY AS A FUNCTION OF THE Z COORDINATE SHOWN ON MICROFICHE.   THE
   SOLUTION OF THE PROBLEM IS OBTAINED FROM THE EQUATION SHOWN ON
   MICROFICHE WHERE THE COEFFICIENTS ARE DETERMINED FROM THE EQUATION SHOWN
   ON MICROFICHE.   AS AN EXAMPLE, THE RADIATION AT THE MIDDLE OF THE FLAT
   WALL OF A DUCT WITH A SEMICIRCULAR CROSS SECTION IS STUDIED.   IN THIS
   CASE, THE COEFFICIENTS V ARE CALCULATED FROM THE EQUATION SHOWN ON
   MICROFICHE AND SOME OF THE VALUES ARE PLOTTED IN THE FIGURE, SHOWING V
   SUB2 AND V SUB4 AS FUNCTIONS OF THE OPTICAL DENSITY. IT IS SHOWN THAT
   THE RADIATION OF THE MEDIUM CAN BE CALCULATED BY USING THE DEGREE OF
   BLACKENSS OF THE ISOTHERMAL RADIATION, WHICH IS MULTIPLIED BY A
   CORRECTION FACTOR. THE RADIATION OF THE NONISOTHERMAL MEDIUM MAY BE
   GREATER OR SMALLER THAN THAT OF THE ISOTHERMAL MEDIUM. THE TEMPERATURE
   VARIES MORE STRONGLY WITH THE DEGREE OF BLACKNESS AS THE OPTICAL DENSITY
   OF THE MEDIUM INCREASES.

UNCLASSIFIED

USSR

MIKK, I., POMERANTSEV, V. (Tallinn Polytechnical Institute, Leningrad Poly-
technical Institute)

"Radiant Heat Transfer in a Duct with Variable Temperature of Radiating Medium"

Tallinn, Izvestiya Akademii Nauk Estonskoy SSR, Fizika, Matematika, January-
March 1970, pp 100-103

Abstract: The article concerns the problem of radiant heat transfer in a
straight duct containing a medium with a one-dimensional temperature field
along the duct. The equation of the density of the resulting heat flow

$$E_{res}(M) - E_{inc}(M) = \frac{1}{4}\iint_{F\ 0}^{L} \eta(P)\exp[-\int_{l^*} k\,dl^*]d l_{PM} v\,dl^*. \qquad (1)$$

is derived with the assumption of absolute blackness of the walls at a tempera-
ture of 0°K. If the medium is grey, nondissipating, and homogeneous, equation
(1) can be expressed in dimensionless coordinates in the form

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USSR

MIKK, I., POMERANTSEV, V., Izvestiya Akademii Nauk Estonskoy SSR, Fizika.
Matematika, January-March 1970, pp 100-103

$$E_{res}(M) = \frac{1}{\pi} \int_{-\frac{\pi}{2}}^{+\frac{\pi}{2}} \int_{-\frac{\pi}{2}}^{+\frac{\pi}{2}} \int_{0}^{l} E(P) \exp[-(l-l')] \cos^2\beta \cos\alpha \, d\beta \, d\alpha \, dl'.$$

The temperature field of the medium is given as black-body radiation density
as a function of the Z-coordinate

$$E(z) = \sum_{n=0}^{\infty} \frac{1}{n!} E^{(n)}(z_0)(l-l')^n \sin^n \beta.$$

The solution of the problem is obtained from the equation

$$E_{res}(z_0) = \frac{1}{\pi} \int_{-\frac{\pi}{2}}^{+\frac{\pi}{2}} \int_{-\frac{\pi}{2}}^{+\frac{\pi}{2}} \left\{ E(z_0)(1-e^{-l}) + E''(z_0) \times \left[1 - \left(1 + l + \frac{1}{2}l^2\right)e^{-l}\right] \sin^2\beta + \dots \right\} \cos^2\beta \cos\alpha \, d\beta \, d\alpha.$$

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USSR

MIKK, I., POMERANTSEV, V., Izvestiya Akademii Nauk Estonskoy SSR, Fizika, Matematika, January-March 1970, pp 100-103

or

$$t = t_0 \left\{ 1 + \frac{1}{4} \frac{E''(z_0)}{E(r_0)} v_2 + \frac{1}{8} \frac{E^{(4)}(z_0)}{E(r_0)} v_4 + \frac{5}{64} \frac{E^{(4)}(z_0)}{E(r_0)} v_6 + \cdots \right\},$$

where the coefficients are determined from the equation

$$v_n = \frac{\int\limits_{-\frac{\pi}{2}}^{+\frac{\pi}{2}} \int\limits_{-\frac{\pi}{2}}^{+\frac{\pi}{2}} \left(1 - e^{-l} \sum\limits_{m=0}^{n} \frac{l^m}{m!} \right) \sin^n \beta \cos^2 \beta \cos \alpha \, d\beta \, d\alpha}{t_0 \int\limits_{-\frac{\pi}{2}}^{+\frac{\pi}{2}} \int\limits_{-\frac{\pi}{2}}^{+\frac{\pi}{2}} \sin^n \beta \cos^2 \beta \cos \alpha \, d\beta \, d\alpha}$$

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USSR

MIKK, I., POMERANTSEV, V., Izvestiya Akademii Nauk Estonskoy SSR, Fizika, Matematika, January-March 1970, pp 100-103

As an example, the radiation at the middle of the flat wall of a duct with a semicircular cross section is studied. In this case, the coefficients v are calculated from the equation
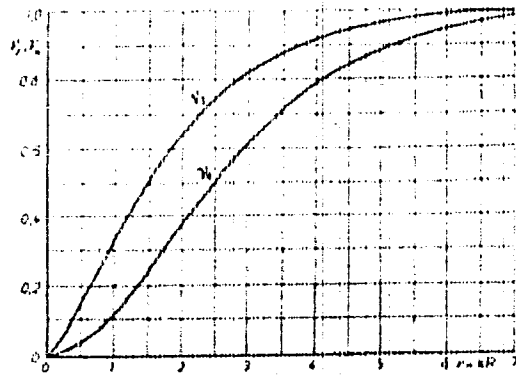
$$v_2(r) = \frac{1 - \frac{2}{\pi}(1 - r^2)[(1 + r^2)\int_r^\infty K_0(u)\,du + rK_0(r) - r^2 K_1(r)] - \frac{4}{\pi}r^2 K_0(r)}{1 - \frac{2}{\pi}[(1 + r^2)\int_r^\infty K_0(u)\,du + rK_1(r) - r^2 K_1(r)]},$$

and some of the values are plotted in the figure, showing v_2 and v_4 as functions of the optical density. It is shown that the radiation of the medium can be calculated by using the degree of blackness of the isothermal radiation, which is multiplied by a correction factor. The radiation of the nonisothermal medium may be greater or smaller than that of the isothermal medium. The temperature varies more strongly with the degree of blackness as the optical density of the medium increases.

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USSR

MIKK, I., POMERANTSEV, V., Izvestiya Akademii Nauk Estonskoy SSR, Fizika,
Matematika, January-March 1970, pp 100-103

5/5

TITLE--CONTROL OF THE SETTING OF PHOSPHATE BINDERS -U-

AUTHOR-(02)-SUDAKAS, L.G., MIKLASHEVICH, N.V.

COUNTRY OF INFO--USSR

SOURCE--TSEMENT. 1970, (3), 18-19

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PHOSPHATE, CEMENT, CATION, BARIUM, CALCIUM, STRONTIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0809   STEP NO--UR/0101/70/000/003/0018/0019

CIRC ACCESSION NO--AP0136243
                    UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--2/NO/70

2/2   012
CIRC ACCESSION NO--AP0135243
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADDN. OF BA, SR, AND CA
   CATIONS, REGARDLESS OF THEIR CONCN., ACCELERATES SETTING PROCESSES IN
   COMPARISON WITH PURE ACID. THE ADDN. OF OTHER CATIONS ESSENTIALLY
   RETARDS SETTING PROCESSES IN COMPARISON WITH PURE ACID (BASED ON MAX.
   CONCNS.). THE STRONGEST RETARDING ACTION IS SHOWN BY MG, CO, NI, ZN
   CATIONS; THIS IS RELATED WITH NATURE OF CATION AND HIGHER SOLY. OF
   CORRESPONDING OXIDES.

UNCLASSIFIED

AA0040674͞   M   IJ͙ 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

241583 MULTI-LAYER PIPE WELDING was improved by
forming a depression under the weld in the
lower layer, which is finally straightened after
completion of the welding process. This method is
applicable to the pipe manufacture with longitudinal
and helical welded joints.
12.6.67 as 1163160/25-27. E.I. MIKLASHEV et allia.
URAL SECT. PRODUCTION & TECHNOLOGY RES.INST.(19.69)
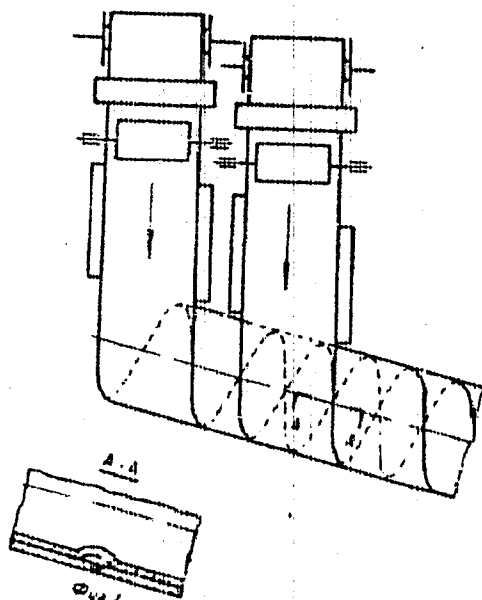Bul 14/18.4.69. Class 21h. Int.Cl.B 23k.

AUTHORS: Miklashevich, Ye. I.; Gur'yanov, G. F.; Ishmayev, O. N.;
Solomonidin, O. V.; Yachmenev, O. N.; Kokorev, P. A.;
and Voropayev, P. D.

Ural'skiy Filial Nauchno - Issledovatel'skogo Instituta

Tekhnologii i Organizatsii Proizvodstva

197502'25

AA0040674

А-А

19750276

UDC 8.74

USSR

MIKLI, T. YU.

"Organization of Programming in the Sodi System"

Translation. The organization of programming in the SODI system is described.
It is based on using the principle of modular programming. By a module we
mean a part of the program equipped with special data and the restrictions which
are necessary for combining this part with the others into a single program.
The operated program has a hierarchical structure. The program composition
begins with the module called basic. Each module contains a transfer to other
modules at any level. Each standard program comprises two parts: processed
and unprocessed. Each word of the standard program belongs to the processed
or unprocessed part depending on whether the address part of it changes or re-
mains invariant when putting the standard program in another part of memory.
The Dispetcher program is used for reading and writing the module on magnetic
tape, for composing the program from modules, for duplication of the modules,
assignment of a new number to the module, reading the modules into the ready-
access memory punch tape or punch cards.

1/1

85948z Neutron activation analysis of rare earth impurities in metallic uranium. Alimarin, I. P.; Miklishanskir, Z.; Yakovlev, Yu. V. (V. I. Vernadskii Inst. Geochem. Anal. Chem., Moscow, USSR). *J. Radioanal. Chem.* 1970, 4(1), 45–51 (Eng). A method with a sensitivity of 2×10^{-7}–1×10^{-9}% has been developed for detg. Yb, Ho, Dy, Gd, Eu, Sm, and La impurities in metallic U by means of neutron activation. The method is based on preliminary chromatographic sepn. of the total amt. of rare earth elements from U by passing the soln. in H_2SO_4 through KU-2 cation exchange resin and eluting the traces of U retained by the resin with a soln. of ascorbic acid. The rare earth impurities are then eluted from the resin with 4–5 N HCl, evapd., and irradiated for 20 hr with a neutron flux of 1.2×10^{12} neutrons/cm²-sec. Subsequently the traces of the rare earth elements are copptd. with $Fe(OH)_3$, dissolved in concd. HCl and sepd. from the Fe and other impurities by passing the soln. through Dowex·1X8 anion exchange resin in the chloride form. The individual rare earth elements are then sepd. from each other by using KU-2 cation exchange resin and a soln. of ammonium α-hydroxyisobutyrate as the eluant.   RCDM

EB

REEL/FRAME
19771122

Acc. Nr.
AP0044480   Abstracting Service: Ref. Code
CHEMICAL ABST.   NE0000

85947y   Neutron activation analysis of rare earth impurities
in europium oxide. Alimarin, I. P.; Mikhailanski, A. Z.;
Yakovlev, Yu. V. (Vernadski Inst. Geochem. Anal. Chim., Mos-
cow, USSR). J. Radioanal. Chem. 1970, 4(1), 75-80 (Eng).

A neutron activation method for detg. Yb, Dy, Ho, Sm, and La
impurities in Eu oxide with sensitivities of $10^{-4}-10^{-7}\%$ is de-
scribed. The method is based on a preliminary concn. of the
rare earth elements by reducing Eu(III) with Zn to Eu(II), and
sepg. the trivalent rare earth elements by extn. chromatog. After
neutron irradn., the individual radioisotopes of the rare earth
elements are sepd. by using KU-2 cation exchange resin and am-
monium α-hydroxyisobutyrate soln. as the eluant.   RCDM

E. B.

REEL/FRAME
19771103

USSR   UDC: 669.293.5

GULYAYEV, B. B., YAKOVLEV, V. T., VINNIK, P. G., MIKLUKHIN, D. Ye.

"Selection of Alloying Elements in the Development of Casting Alloys Based on Niobium"

Sb. Nauch. Tr. Tomsk. Inzh.-Stroit. In-t [Collected Scientific Works of Tomsk Institute of Construction Engineering], 1973, No 21, pp 3-11 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 81721, by L. Petrova).

Translation: A summarization is presented of existing state diagrams of binary systems of Nb-based alloys, and predictions are made for systems not studied. The analysis allows an estimation of the nature of the interaction of Nb with the elements and determination of their effects on increasing and decreasing the required properties of alloys being developed. 8 figures, 1 table, 9 biblio. refs.

1/1

USSR   UDC 620.17-41

MIKLYAYEV, P. G. and VOLOZHEVA, L. YA.

"A Method of Evaluating the Plastic Anisotropy of Sheet Ma-
terials"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 9, 1973, pp 1119-
1122

Abstract: In this article the authors show the existence of
a functional dependence of normal plastic anisotropy on the
degree of deformation under tension ε. In connection with
this they suggest evaluating the normal anisotropy for sev-
eral levels of ε.

     For a more accurate and complete evaluation of the
anisotropy of sheet materials the authors recommend using
the dependence of the coefficient of normal anisotropy R
on the direction in the plane of the sheet.

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USSR

    The authors have compiled a table to compare the coef-
ficient of anisotropy of the mechanical properties of rolled
sheets of aluminum alloys and titanium alloys. Figure 1 il-
lustrates the dependence of the coefficient of normal ani-
sotropy on the direction of selecting samples of rolled
sheets from two alloys. Figure 2 gives the dependence of
the mean value and anisotropy of the coefficient $R(A_R)$ on
the degree of deformation under tension.

    The article contains 1 table, 2 illustrations, and 2
bibliographic references.

2/2

NESHPOR, G. S., MIKLYAYEV, P. G. and KUDRYASHOV, V. G.

"Effect of the Sequence of Producing Fatigue Cracks and Heat Treating on the Failure Kinetics of Sheet Material Specimens"

Abstract: It is shown that the procedural sequence of producing a fatigue crack and heat treating centrally notched sheet material specimens cut along the direction of rolling from VT15 β-titanium alloy sheets affects the property of resistance to growth of the initial crack in subsequent tensile tests, the ultimate breaking stress, and the critical crack length; the values of the stress intensity factor (failure ductility) are practically unaffected. The heat treatment consisted of hardening from 800°C for 10 min and aging at 480°C for 25 hrs. The central notch was 15 mm long and 0.06 mm wide. The fatigue stresses, under cyclic conditions, were applied at 800 cycle/min at a minimum of 2 kg/mm² and a maximum of 15 kg/mm².
(3 illustrations, 6 biblio. references)

1/1

USSR   UDC 669.71.017:539.43.01

STEPNOV, M. N., MIKLYAYEV, P. G., KOPNOV, V. I., KALUGINA, A. A., and
FOMIN, K. N.

"The Effect of Structural Microinhomogeneity on the Fatigue Resistance of the
D1 Alloy"

Translation: A method is suggested for the quantitative rating of the
microstructure of aluminum alloys by the inhomogeneity of the microplastic
deformation. The relation between the inhomogeneity factor of microplastic
deformation and the fatigue resistance of rods and stampings of the D1 alloy is
demonstrated. Seven figures, one table, four bibliographic reference.

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USSR

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UDC 620...78.3-41

NESHPOR, G. S., MIKLYAYEV, P. G., and KUDRYASHOV, V. G.

"Method of Evaluating the Kinetics of Fatigue Crack Growth in Sheet Specimens of Anisotropic Materials"

Moscow, Zavodskaya Laboratoriya, No 10, 1970, pp 1245-1248

Abstract: A study is made of the relationship between fatigue crack growth and variations in the coefficient of stress intensity in the apex of cracks during a cycle in sheet specimens of the alloys D^{16}-AT, 01911-T4, and VT1-... oriented to the direction of rolling. It is shown that anisotropy of fatigue parameters in cyclic loading can be evaluated by determining these parameters for one direction, after which values of these parameters can be calculated, using the equation derived, for any other direction.

1/1

TITLE--EFFECT OF THE SHAPE AND SIZE OF THE CROSS SECTION OF EXTRUDED PARTS
   MADE FROM ALUMINIUM ALLOY D16T ON THE ANISOTROPY OF THEIR MECHANICAL

AUTHOR-(02)-MIKLYAYEV, P.G., CHERNIKOVA, S.R.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METALLY, MAR. 1970, (3), 58-63

DATE PUBLISHED----MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM ALLOY, MECHANICAL PROPERTY, X RAY ANALYSIS,
   ANISOTROPY, METAL EXTRUSION/(U)D16T ALUMINUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1920   STEP NO--UR/0136/70/000/003/0058/0063

CIRC ACCESSION NO--AP0132182
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0132182

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE MECHANICAL PROPERTIES OF A
    NUMBER OF EXTRUDED AL ALLOY (D16T) PARTS WITH CROSS SECTIONS OF VARIOUS
    SHAPES AND SIZES WERE STUDIED WITH SPECIAL REF. TO THE RELATION BETWEEN
    THE ANISOTROPY OF THE MECHANICAL CHARACTERISTICS AND THE GEOMETRICAL
    PARAMETERS OF THE CROSS SECTION. THUS THE DIFFERENCE IN STRENGTH ALONG
    AND ACROSS SUCH SAMPLES TENDED TO INCREASE WITH INCREASING WIDTH PER
    THICKNESS RATIO OF THE CROSS SECTION. ALTHOUGH THE GENERAL PICTURE OF
    THE MICROSTRUCTURE AS INDICATED BY X RAY AND METALLOGRAPHIC ANALYSIS
    ONLY VARIED A LITTLE.

UNCLASSIFIED

TITLE--ON ESTIMATING THE ANISOTROPY OF THE MECHANICAL PROPERTIES OF METALS, ALLOWING FOR THE EFFECT OF THE STRESSED STATE -U-

AUTHOR-(02)-MIKLYAYEV, P.G., VOLOZNEVA, L.YA.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB., 1970, 36, (1), 84-87

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT, MATERIALS

TOPIC TAGS--ALUMINUM ALLOY, MECHANICAL PROPERTY, TEST METHOD, ANISOTROPY, STRESS ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0240   STEP NO--UR/0032/70/036/001/0084/0087

CIRC ACCESSION NO--AP0124002
                    UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124002
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE STRESSED STATE
OF THE METAL SAMPLES, USED IN MECHANICAL TESTING, ON THE RESULTS OF THE
TESTS IS DISCUSSED; A TYPICAL PRACTICAL EXAMPLE (EXTRUDED AL ALLOY
PARTS) IS CONSIDERED. THE ANISOTROPY OF THE MECHANICAL PROPERTIES (UTS,
YS) OF SUCH PARTS DEPENDS VERY LARGELY ON THE SEVERENESS OF THE INTERNAL
STRESSES EXISTING IN THE SAMPLE MATERIAL WHEN TESTING. THIS FACTOR MUST
BE ALLOWED FOR WHEN SELECTING THE OPTIMUM NUMBER OF TEST SAMPLES AND THE
TEST DIRECTIONS IN EACH.

UNCLASSIFIED

Aluminum and Its Alloys

USSR

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UDC 620.17:669.71

VOLOZNEVA, L. YA., and MIKLYAEV, P. G.

"Nature of the Anisotropy of the Strength Characteristics of Aluminum Alloys"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 7, 1970, pp 37-41

Abstract: An investigation was made of the nature of the anisotropy of the strength characteristics of the D16 aluminum alloy. The chemical composition of the alloy is as follows: 4.3% Cu, 1.45% Mg, 0.74% Mn, 0.35% Fe, 0.22% Si, and 0.1% Zn. Molded strips 42 x 250 mm in cross section were investigated. It was found that the anisotropy of the mechanical properties depends on the structural state and type of work-hardening. The anisotropy of the yield point was determined mainly by the presence of a predominate orientation of the crystals in the worked intermediate products (primary anistropy) and oriented isolation of the Guinier-Preston zones during the process of natural aging of textured material (secondary anisotropy). The anisotropy of the ultimate strength and true resistance to fracture arises basically from the mechanical texture. The possibility is shown of regulating the degree of anisotropy of the yield point by varying the preferential orientations of the material and selecting the corresponding combination of them to ensure the required amount of anisotropy.

1/1

USSR   UDC 620.172:620.182

NESHPOR, G. S., MIKLYAYEV, P. G., and KUDRYASHOV, V. G.

"Application of Diagrams of Macroscopic Destruction in Evaluating the Quality
of Materials"

Abstract: Mechanical characteristics obtained in standard tensile tests of
smooth samples and in blow-bending tests of notched and cracked samples were
compared with kinetic characteristics determined under conditions of develop-
ing destruction. Investigations were carried out on sheets from AMg6
aluminum alloy (5.8% Mg; 0.6% Mn; 0.1% Cu, 0.4% Fe, 0.3% Si, 0.15% Zn,
base Al), 2 mm thick, annealed at 320°C for 1 hr, with 30 and 80% of cold
working. The results showed that in evaluating the quality of materials and
in choosing optimum conditions for working them it is indispensable to use
the diagrams of macroscopic destruction alongside the standard mechanical
characteristics. Four figures, 1 table, 7 references.

1/1

USSR   UDC: 621.376:530.145.6:621.376   7

KLYUYEV, V. P., MASH, D. I., MOROZOV, V. V., MIKOGOSYAN, D. N., ORAYEVSKIY, A. N.

"Detection of Infrared Emission by Shifting it to the Visible Range"

Translation: An experimental investigation was made into the possibility of detecting weak infrared radiation by shifting it in a nonlinear crystal ($LiNbO_3$) with a power- ful pulse of emission from an argon laser. The installation used was sufficiently sensitive to create a nonlinear infrared spectrometer; it is assumed that such a spectrometer can produce broadening of the order of 1 Å. Two illustrations, bibliog- raphy of twelve titles. N. S.

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USSR

UDC 537.311.33

MIKOLAYCHUK, A. G., KOGUT, A. N., and IGNATIV, M. I., L'vov State University imeni Iv. Franko

"Electrical Properties of Germanium Telluride and Selenide Thin Films"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 7, 1970, pp 103-105

Abstract: The article describes results of the measurement of the electrical conductivity and forbidden-gap width of germanium telluride and selenide in thin films and discusses the dependence of these parameters on the structure. The results are qualitatively explained on the basis of A. I. Gubanov's theory of the electrical conductivity of amorphous semiconductors.

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TITLE--PREPARATION AND STRUCTURE OF GERMANIUM TELLURIDE AND SELENIDE THIN
   FILMS -U-

AUTHOR-(02)-MIKOLAYCHUK, O.G., KOGUT, A.N.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 353-7

DATE PUBLISHED------70

SUBJECT AREAS--MATERIALS, CHEMISTRY, PHYSICS

TOPIC TAGS--SELENIDE, GERMANIUM COMPOUND, TELLURIDE, SINGLE CRYSTAL,
   POTASSIUM CHLORIDE, METAL FILM, POLYCRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0903   STEP NO--UR/0070/70/015/002/0353/0357

CIRC ACCESSION NO--AP0116413
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0116413
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GEX CRYSTALS, X EQUALS TE OR SE,
  WERE OBTAINED ON DIFFERENT SUBSTRATES. GETE AT 300-400DEGREESK AND GESE
  AT 300-500DEGREESK ON SINGLE CRYSTAL AND POLYCRYST. SUBSTRATES GAVE
  AMORPHOUS FILMS. THE TRANSITION TEMP. FROM AMORPHOUS TO POLYCRYST.
  FILMS OF THICKNESS GREATER THAN OR EQUAL TO 300 ANGSTROM IS PRACTICALLY
  CONST., AND INCREASED AS THE THICKNESS DECREASED. THE AMORPHOUS STATE
  OF FILMS SMALLER THAN 50 ANGSTROM THICK COULD NOT BE CHANGED. THE
  INTENSITY OF THE ELECTRON SCATTERING CURVE EXHIBITED 3 MAX. ON SINGLE
  CRYSTALS OF KCL AND MICA, GETE FILMS OBTAINED AT 450, 500, AND
  550DEGREESK WERE ORIENTED.   ON MICA THE CRYSTALS WERE MORE PERFECT THAN
  ON KCL.   FACILITY: L'VOV. GOS. UNIV., LVOV, USSR.

UNCLASSIFIED

TITLE--VARIATIONS OF SOLAR CONSTANT -U-

AUTHOR-(02)-KONDRATYEV, K.YA., MIKULSKIY, G.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA,
   VOL VI, NO 3, 1970, PP 227-238

DATE PUBLISHED--------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS, ATMOSPHERIC SCIENCES

TOPIC TAGS--HEAT BALANCE, BALLOON, METEOROLOGIC OBSERVATION, VERTICAL
   PROFILE, SOLAR CONSTANT, SOLAR RADIATION, TROPOSPHERE, STRATOSPHERE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0713   STEP NO--UR/0362/70/006/003/0227/0238

CIRC ACCESSION NO--AP0110458
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0110448
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINCE 1961 SPECIALISTS AT
  LENINGRAD UNIVERSITY HAVE BEEN USING BALLOONS FOR STUDYING VERTICAL
  PROFILES OF THE RADIATION BALANCE AND ALL ITS COMPONENTS IN THE
  TROPOSPHERE AND LOWER STRATOSPHERE. THE ACCURACY IN MEASUREMENTS OF THE
  ABSOLUTE FLUX OF SOLAR RADIATION IS PLUS OR MINUS 1.5 PERCENT. SINCE
  THE CEILING OF AEROSTAT SOUNDINGS WAS ABOUT 30 KM, THIS MADE IT POSSIBLE
  TO EXTRAPOLATE THE DETERMINED VALUES CORRECTLY BEYOND THE LIMITS OF THE
  ATMOSPHERE AND THUS DETERMINE THE ABSOLUTE VALUES OF THE SOLAR CONSTANT.
   EXTRAPOLATION OF THE EXPERIMENTAL VALUES OF THE FLUX S OF DIRECT SOLAR
  RADIATION FROM THE LEVELS 25-33 KM BEYOND THE LIMITS OF THE ATMOSPHERE
  WAS ACCOMPLISHED IN TWO WAYS. THE FIRST METHOD IS BASED ON USE OF
  BOUGUER'S LAW (LOG S EQUALS LOG S BUO PLUS M LOG P). THE TRANSPARENCY
  COEFFICIENT P OF THE ABOVE LYING LAYER WAS OBTAINED FROM DATA FROM ONE
  OF THE FLIGHTS WHEN THERE WAS HIGH STABILITY OF ATMOSPHERIC TRANSPARENCY
  BY CONSTRUCTING A GRAPH OF THE DEPENDENCE OF LOG S ON ATMOSPHERIC MASS
  M. FOR ALL OTHER FLIGHTS THE TRANSPARENCY COEFFICIENT WAS ASSUMED TO BE
  A CONSTANT VALUE. THE S SUB0 VALUES, OBTAINED USING BOUGUER'S FORMULA,
  ARE ONLY THE RESULTS OF A PARTIAL EXTRAPOLATION BECAUSE NO CORRECTION
  HAS YET BEEN INTRODUCED FOR RADIATION ABSENT AT ALTITUDES OF ABOUT 30
  KM. IT IS KNOWN THAT FOR THE INTEGRAL FLUX OF SOLAR RADIATION THE
  DEPENDENCE OF LOG S ON M HAS A NONLINEAR FORM BECAUSE AT AN ALTITUTE OF
  ABOUT 30 KM THE ATMOSPHERIC THICKNESS ATTENUATING RADIATION IS SMALL AND
  THE USE OF A LINEAR DEPENDENCE DOES NOT LEAD TO A SIGNIFICIANT ERRORS IN
  THE VALUE S SUB0, SUBE, THE EXTRAPOLATED VALUE OF THE SOLAR CONSTANT.

                         UNCLASSIFIED

CIRC ACCESSION NO--AP0110448
ABSTRACT/EXTRACT--THE EXTRAPOLATION METHOD USED MADE IT POSSIBLE TO TAKE
   INTO ACCOUNT THE ATTENUATION OF SOLAR RADIATION BY THE AEROSOL COMPONENT
   SITUATED ABOVE THE UPPER LEVEL OF SOUNDING. SINCE VERY LITTLE DATA IS
   AVAILABLE FOR THE OPTICAL AEROSOL THICKNESS OF THE ATMOSPHERE AT
   ALTITUDES 30-200-KM, THIS EXTRAPOLATION METHOD EVIDENTLY MAKES SENSE.
   AFTER INTRODUCING CORRECTIONS FOR THE RADIATION WHICH IS ABSENT AT THIS
   LEVEL, ONE OBTAINS THE FINAL VALUE OF THE SOLAR CONSTANT. ON THE BASIS
   OF THESE AEROSTAT OBSERVATIONS AND OTHER IT WAS SHOWN THAT THE MOST
   RELIABLE VALUE OF THE SOLAR CONSTANT IS 1.94 CAL-CM PRIME2 MIN AND THE
   ACCURACY IN DETERMINING THIS PARAMETER IS PLUS OR MINUS 1 PERCENT. THIS
   VALUE OF THE SOLAR CONSTANT IS OBSERVED FOR WOLF NUMBERS OF 80-100.
   WITH AN INCREASE (OR DECREASE) IN THE WOLF NUMBERS THE VALUE OF THE
   SOLAR CONSTANT CAN CHANGE. THE MAXIMUM POSSIBLE DECREASE DOES NOT
   EXCEED 2-2.5 PERCENT. THESE DATA REQUIRE FURTHER CONFIRMATION ON THE
   BASIS OF DIRECT MULTIPLE MEASUREMENTS OF THE SOLAR CONSTANT BEYOND THE
   LIMITS OF THE ATMOSPHERE.   FACILITY: LENINGRAD STATE UNIVERSITY.

MIKOLYUK, YE A

II-6. CONDITIONS OF ORIENTED GROWTH OF CADMIUM TELLURIDE FOR CRYSTALLIZATION FROM THE VAPOR PHASE

[Article by A. V. Vanyukov, I. I. Krenov, Ye. A. Mikolyuk, Moscow; Novosibirsk, III Symposium on Processing Metals & Oxides, Poluprovodnikovykh soyedineniy; Frunze, Russian, 13-17 June, 1972, p 14]

The epitaxial layers of cadmium telluride on different substrates were grown by synthesis from the elements cadmium and tellurium in a hydrogen flow...the effect of the temperature of the substrate, the flow rate of the gas carrier, the temperature gradient in the crystallization zone and the composition of the vapor-gas mixture on the process of epitaxial growth and perfection of the crystal structure of the films obtained. The saturation factor was estimated by the variation of the isobaric parameter

$$\Delta Z = -RT(\ln/K_p) \text{ where } \Pi = P_{Cd}(P_{Te_2})^{1/2} \text{ is the product of the partial vapor pressures of the components.}$$

Oriented crystallization of cadmium telluride on the crystal-substrate is measured by the optimal relation between the temperature and supersaturation related by the distribution law of a defined type. The nature of this distribution is determined by the cooling rate of the vapor-gas mixture, the sufficiently broad range of values of which in the presence of a linear temperature gradient creates unfavorable conditions for the epitaxial growth of CdTe with respect to the entire length of the crystallization zone. The variation of the solution of the partial pressures of Cd and Te₂ in vapor over the growing film has a significant effect on the growth rate which is maximal in P_{Cd}/P_{Te_2}.

2: however, the nature of the distribution $\Delta Z = f(T)$ does not vary here.

The most perfect epitaxial layers of cadmium telluride were grown at cooling rates of 19.6-23.6 deg/sec. The supersaturation values in the temperature range of 560-780°C were 0.05-2.00 kcal/mole. The ratio of P_{Cd}/P_{Te_2} changed from 0.3 to 9.0 which permitted CdTe films to be obtained of both the p and n types of conductivity with a broad set of properties.

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Mikolyuk, Ye. A.

V-14. KINETICS OF THE EPITAXIAL GROWTH PROCESS OF SOLID SOLUTIONS OF $Cd_xHg_{1-x}Te$
UNDER ISOTHERMAL CONDITIONS

[Article by I. I. Krotov, Ye. A. Mikolyuk, A. V. Tzypukov, Moscow; Novosibirsk;
III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i
Plenok, Russian, 12-17 June, 1972, p 53]

The cadmium telluride obtained by oriented crystallization on fluorite
and gallium arsenide and the source of the material which was prepared as fluo-
ride were at a defined distance from each other under isothermal conditions.

The study was performed by varying the process temperature, the distance
between the source and the substrate, the duration of the experiment, and the
subsequent measurement of the thickness of the epitaxial layer obtained with an
accuracy of ± 0.1 microns. It was demonstrated that the temperature dependence
of the thickness of the epitaxial layer in the 500-650°C range is described
quite well by an equation of the type

$$\delta = A \exp(-B/T),$$

where the coefficients A and B are defined primarily by the substrate thickness.

As a result of a study of the time functions it turned out that the
growth rate of the epitaxial layer is not constant with time and the corresponding
curves have S-type shape with a characteristic retarded growth section in the
initial stage of the process (incubation period). In general form the curves
obtained are described well by the equation

$$\delta = A(t - t_0)^{1/2}, \delta_0$$

where t_0 is the thickness of the epitaxial layer formed during the incubation
period. A is the coefficient which depends on the substrate thickness. The
variation in thickness of the epitaxial layer during the growth process is
determined by the diffusion processes occurring in the solid phase and, after
subtracting the incubation period, is proportional to the square root of the
time.

A study was made of the effect of the excess partial pressure of mercury.
The effect of the substrate on the topography of the $Cd_xHg_{1-x}Te$ film surface and
the degree of perfection of their crystal lattice were investigated.

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USSR

UDC 577.4

MIKONI, S. V., and PEREBOROV, S. I.

"Algorithm for Constructing Tests for a Class of Many-Valued Lattices"

Izv. Leningr. elektrotekhn. in-ta (Bulletin of Leningrad Electrical Engineering Institute), 1972, vyp 118, part 1, pp 146-149 (from RZh-Matematika, No 3, Mar 73, Abstract No 3V445 by KH. MADATYAN)

Translation: The article suggests a method for the construction of check and diagnostic tests for combinational circuits which realize many-valued logic functions in a basis containing the functions max, min, and all one-place functions. It is assumed that single stable faults occur in the circuit. An algorithm is given for the construction of tests for circuits without the branching of variables. As is noted by the authors, the algorithm which is set forth is designed for machine implementation.

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MIKONI, S. V., PEREBOROV, S. I.

"Algorithm for Construction of Tests for One Class of Multivalued Structures"

Izv. Leningr. Elektrotekhn. In-ta. [Works of Leningrad Institute of Electric Engineering], 1972, No 118, Part 1, pp 146-149 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1975, Abstract No 3 V445 by Kh. Madatyan).

Translation: A method is suggested for construction of checking and diagnostic tests for combination circuits realizing functions in multivalued logic in a base containing the functions max, min and all single-value functions. It is assumed that individual stable defects arise in the circuit. An algorithm is presented for construction of tests for systems without branching of variables. As the authors note, the algorithm presented is designed for machine realization.

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UDC 577.4

USSR

MIKONI, S. V., POZDNYAKOV, L. N.

"Algorithm for Constructing Tests for Combination Automata"

Translation: The algorithm is designed to construct inspection tests for combination automata, the logical elements of which implement monotonic boolean functions ($\vee$, $\wedge$) and the inverses of them ($\not\vee$, $\not\wedge$).

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1/2   025
TITLE--CYCLIC UNSATURATED COMPOUNDS. 31. CONVENIENT METHOD FOR DETERMINING
SUBSTITUENT CONFIGURATION IN POSITION SEVEN OF THE NORBORNENE SKELETON
AUTHOR--MIKOS, E.P., FADEYEVA, T.M., AKHREM, A.A., MIRONOV, V.A.,
POLKOVNIKOV, B.D.

M

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSR, SER. KHIM, 1970, (1), 129-34

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ANHYDRIDE, DICARBOXYLIC ACID, CYCLIC GROUP, HEPTENE,
HYDROGENATION, THERMAL DECOMPOSITION, NMR SPECTRUM, IR SPECTRUM,
CHEMICAL KINETICS, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/2671   STEP NO--UR/0062/70/000/001/0129/0134

CIRC ACCESSION NO--AP0200275
ZZZZZZZZZZZZ   UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0200275
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGENATION OF ENDO,ANHYDRIDES
OF 7,SYN,METHYL,AND,7,ANTI,METHYLBICYCLO (2.2.1)
HEP,2,TENE,5,6,DICARBOXYLIC ACIDS WAS STUDIED KINETICALLY; THE SYN
ISOMER WAS HYDROGENATED AT ABOUT HALF THE RATE DISPLAYED BY THE ANTI
ISOMER OR BY THE UNSUBSTITUTED ANHYDRIDE. THE HYDROGENATION MIXT. FROM
THE SYN ISOMER GAVE 7,SYN,METHYLBICYCLO (2.2.1) HEPTANE,5,6,DICARBOXYLIC
ANHYDRIDE, M. 122 TO 3DEGREES, WHICH HYDROLYZED TO FREE DICARBOXYLIC
ACID, DECOMPD. 178 TO 9DEGREES (DI ME ESTER, B SUB2 48 TO 9DEGREES, N
PRIME20 SUBD 1.4933, WAS PREPD. WITH CH SUB2 N SUB2). SIMILARLY THE
ANTI ISOMER WAS HYDROGENATED TO THE SATD. ANALOG, M. 134 TO 6DEGREES,
WHICH GAVE THE FREE 7,ANTI,METHYLBICYCLO (2.2.1)   NMR AND IR
HEPTANE,5,6,DICARBOXYLIC ACID, DECOMPD. 169 TO 71DEGREES.
SPECTRAL CURVES WERE SHOWN. THE CONFIGURATION OF THE SUBSTITUENT IN THE
7 POSITION IN THE BICYCLOHEPTENE SKELETON CAN BE CONVENIENTLY DETD. BY
THE DETN. OF RELATIVE RATES OF HYDROGENATION.

UNCLASSIFIED

ZZZZZZZZZZZZ

EFFECT OF o, p'-DDD ON TRANSCORTIN-BINDING ABILITY IN DOGS

V. P. Komisarenko, O. S. Mikosha, M. D. Tronko

Department of Patophysiology, Institute of Endocrinology and Metabolism, Kiev

Summary

Hydrocortisone content and the level of transcortin in plasma of dogs were determined before and after o, p'-DDD administration.

It is noted that due to o, p'-DDD administration a complete inhibition of 11-oxycorticosteroid synthesis takes place.

Injections of o, p'-DDD raised the transcortin level. The application of the inhibitor did not change the protein concentration in plasma.

REEL/FRAME
19820922

UDC 539.219.3

USSR

ZEMSKOV, G. V., KOGAN, R. L., and MIKOTINA, N. F.

"Codiffusion of Elements in Chromium Aluminizing"

Kiev, Metallofizika, No 32, 1970, pp 124-127

Translation: The research results obtained in the surface alloying of commercial iron and steel 20 with aluminum and chromium from powdered mixtures of these elements in containers with a fusible seal, are set forth. It is shown that only with a definite aluminum and chromium ratio is it possible to obtain diffusion layers simultaneously containing both elements in considerable amounts. The kinetics of the process of chromium aluminizing and the distribution of elements over the thickness of diffusion layers were studied, and the nature of the change in the concentration of alloying elements on the surface of diffusion layers depending on the content of elements in the saturing mixtures was determined.

According to the concentration curves obtained by means of the MAR-1 microroentgenospectral installations, the coefficients of chromium diffusion in a solid solution with a varying aluminum content in it were calculated. It

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- 3 -

USSR

ZEMSKOV, G. V., et al., Metallofizika, No 32, 1970, pp 124-127

was established that, as aluminum content in the solid solution increases, the diffusion mobility of chromium rises sharply.

Bibliography: 2 entries. Illustrations: 5.

2/2

UDC 621.357.7

USSR

GERENROT, YU. YE., RABINOVICH, S. M., and MIKRINICH, N. A.

"Internal Stresses in Superthin Films of Electrolytic Copper"

Moscow, Zashchita Metallov, Vol 6, No 6, Nov-Dec 70, pp 713-716

Abstract: This article contains the results of a study of internal stresses of copper films 100-1,000 Å thick as a function of current density and composition of the sulfate electrolyte. The internal stresses were measured by the flexible cathode method using a specially designed, highly sensitive instrument. The experimental procedure is described, and the results are presented in the form of graphs and tables showing the cathode deflection as a function of deposition time and the scheme for adjustment of it considering the postelectrolysis phenomena, the internal stresses in copper coatings 1,000 Å thick as a function of current density in electrolytes made up of H_2SO_4 at 50 g/liter, $CuSO_4 \cdot 5H_2O$ at 50, 100, 5 and 200 g/liter, and CS $(NH_2)_2$ at 0, 10^{-4} and 10^{-3} moles/liter.

It is noted that the unusually high stresses ($100-150$ kg/mm^2) detected in thin copper films during low deposition rates greatly exceed the stress-rupture strength of metallurgical copper ($20-25$ kg/mm^2). The stress-rupture

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strength of vacuum copper condensate 100-700 Å thick reaches 170 kg/mm^2, and it is entirely possible that galvanic deposits of the indicated thicknesses have at least equal strength. Then the internal stresses arising during electrocrystallization of copper turn out to be commensurate with the stress-rupture strength. It is concluded that the study of stresses occurring in galvanic deposits at low current densities gives reliable information about the interaction of the organic substances in the electrolyte with the surface of the electrode and the mechanism of occurrence of internal stresses.

    In galvanic films of identical thickness (100 Å and more) obtained with various current densities (0.005-0.5 a/inch^2), the process rate of the postelectrolysis processes is approximately the same. This can be seen from the curves recorded after halting electrolysis. Within the limits of the studied thicknesses (100-1,000 Å) corrected by taking into account the postelectrolysis phenomena, the dependence of the cathode deflection on electrolysis time is rectilinear. The internal compressive stresses for low current densities are unusually high for copper. With an increase in current density the compressive stresses drop sharply. With a further increase in the current density, tensile

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stresses occur. The higher the concentration of copper sulfate in the solution, the lower the stresses of both signs and the more the sign of the stresses in the deposits varies with greater current density. Simultaneously with this variation, the postelectrolysis phenomena in the copper films cease, and in deposits with tensile stresses no postelectrolysis phenomena are observed.

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USSR   UDC 621.313.333:538.4

KALNYN', A. Ya., MIKRYUKOV, Sh. K., PETROVICHA, R. A.,
RUPENEYT, V. A., and ULMANIS, L. Ya.

"Flat Induction Pump Characteristics With Heterogeneous Electro-
magnetic Force Distribution Along the Channel Width"

Riga, Magnitnaya Gidrodinamika, No 4, Oct-Dec 71, pp 94-98

Abstract : Velocity profiles and p(Q)-characteristics of magneto-
hydrodynamic (MHD) machines with accounting for local slipping
along the channel width with non-uniform distribution of electro-
magnetic forces are calculated and compared with experimentally
derived results. The latter comply satisfactorily with theoreti-
cal calculations. The velocity profiles calculated for various
flow rates Q and a current load of $A=0.27 \times 10^5$ A/m show that at
pumping conditions a reverse flow exists on channel borders. The
investigation revealed that the calculation of MHD-machines by
simultaneous accounting for electromagnetic and hydraulic proces-
ses results in more precise conformity of theoretical and experi-
mental data. Five illustr., four formulas, six biblio. refs.

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M   UDC 541.13.183

USSR

KOPINETS, I. F., KOVACH, Ye. T., MIKULANINETS, S. V., RUBISH, I. D., and CHEPUR,
D. V., Uzhgorod University

"Effect of Adsorption on Electrical and Photoelectric Properties of CdS_xSe_{1-x}
Thin Films"

Tomsk, Izvestiya VUZ, Fizika, No 4, 1970, pp 41-44

Abstract: The effect of adsorption (as one of the factors effecting the state of
the surface of thin films) of oxygen, water vapors, benzene, ethyl alcohol, and
acetone on the electrical and photoelectric properties of a solid solution of
CdS_xSe_{1-x} thin films was investigated. Experiments showed that the effect of
adsorption on conductivity is a function of the thickness of the film, increas-
ing as the thickness decreases. The adsorption kinetics also depends on the
thickness of the layer: the thinner the layer, the more rapidly adsorption-
desorption equilibrium occurs. Adsorption kinetics as a function of temperature
was also noted: the rate of adsorption increases with temperature, probably
indicating activated adsorption. The photocurrent and dark current increase
under the absorption of oxygen and decrease under the absorption of benzene,
acetone, ethyl alcohol, and water. The following explanation is given for these

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KOPINETS, I. F., et al, Izvestiya VUZ, Fizika, No 4, 1970, pp 41-44

results: the increase in the thermoelectron work function under chemisorption of oxygen indicates that the chemisorbed oxygen is bonded with a "strong" n-bond or acceptor bond with the surface of the samples. Adsorption of benzene, acetone, ethyl alcohol, and water leads to a decrease in the thermoelectron work function, which fact is explained by their chemisorption of the "strong" p-bond type. This chemisorption leads to a charging on the surface for the positive charge and to a bending of the zones downward in the region near the surface, which condition leads to a decrease in the thermoelectron work function under chemisorption. These results are said to agree with the electron theory of catalysis of Vol'kenshteyn and with experimental results previously obtained by the authors.

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UDC 616-001.34-057

USSR

MIKULINSKIY, A. M., SUDONINA, L. T., LASHCHENKO, N. S., KOSSOVSKIY, N. N., and AZOVSKAYA, I. I., Gor'kiy, Institute of Labor Hygiene and Occupational Diseases

"Physiological and Clinical Characteristics of Vibration Sickness in Individuals Working With High-Frequency Rotational Instruments and Ways of Preventing it"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 12, 1971, pp 15-18

Abstract: Vibration sickness was diagnosed in 19.5% of 296 aviation industry workers working with machines producing vibrations of 63-2000 Hz. It was characterized by disturbances of the peripheral blood circulation, loss of sensitivity to vibration after 1-4 years of work with vibrating instruments, neurotrophic abnormalities and angiospasmatic reaction of the peripheral blood vessels of the upper limbs. Cardiograms of 11 workers (of 26 tested) showed some abnormalities. X-ray studies showed generative-dystrophic changes in the hand bones, such as cysts, enostosis, aseptic necrosis, and degenerative arthrosis. Spinal changes were in a form of degenerative spondylo-arthrosis of the neck and chest vertebrae. A pronounced vegetative-sensory

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USSR

UDC 616.001.34-057.084;[614.33

MIKULINSKIY, A. M., Candidate of Medical Sciences, and YEFREMOV, N. T.,
Candidate of Economic Sciences, Gor'skiy Scientific Research Institute of
Labor Hygiene and Occupational Disease and Chair of Economics of Socialist
Industry of Gor'kiy Univerlsty

"Social-Hygienic and Economic Significance of Reduced Occupational Morbidity
Due to Vibration"

Abstract: The purpose of the investigations was to provide an analysis of the
effect of prolonged work with strongly vibrating tools on the physiological
functions of the organism, and the economic losses due to the development of
occupational disease caused by vibration. The investigations were conducted
at the Gor'kiy autoplant where highly vibrating pneumatic grinding tools are
used in the manufacture of dies and other metal products. Changes in the
peripheral circulation, cardiovascular system, and the namotor apparatus were
studied. Periodic examinations of the workers established that prolonged
work with strongly vibrating machines induces the development of vibration
pathology. The economic impact of vibration pathology was determined by a
study of 56 shop workers with vibration sickness, noen over 40 years of age,
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USSR

MIKULINSKIY, A. M., and YEFREMOV, N. I., Gigiyena i Sanitariya, "Meditsina,"
Vol 36, No 8, Aug 71, pp 59-62

highly skilled and with a great deal of experience. An anamnesis of these
workers revealed that during the past five years of working with strongly vib-
rating penumatic tools each lost 30 working days annually because of occupa-
tional illness, their average annual productivity dropped by 11%, and the
total 5-year financial loss because of such illness amounted to 167.7 thousand
rubles, an amount equal to that of 23 days of the shop's output. Consider-
able additional losses in time and money were incurred as a result of the
required medical and clinical care, hospitalization, necessary extra rest
periods., and vacations, early retirements because of illness, large turn-
over of workers due to unfavorable working conditions, cost of subsidized
retraining of workers for transfer to other occupations with training period
lasting from six months to three years, and cost of training new workers.
Steps must be taken to design tools with reduced vibration. A new grinding
machine with an air-cushioned handle was designed in 1970. The new machine
reduces vibration to a level even lower than that which is considered safe.
Design and scientific research establishments and plants when planning new
technical equipment must take into consideration not only their high produc-
tivity but also their complete safety.
2/2

EXTRACTION AND DRILLING

USSR   UDC 669.7/.9.4(088.8)

BELYAYEV, G. S., MIKULINSKIY, A. S.

"Method of Refining Metals and Alloys"

USSR Author's Certificate No 313867, filed 10/09/68, published 10/12/71,
(Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract
No 5 G204 P by G. Svodtseva).

Translation: In order to increase metal quality, vapors of alkali or alkali
earth metal are blown through at $5 \cdot 10^{-2} - 5 \cdot 10^{-2}$ l/sec per ton of metal. Blow-
ing is conducted with a mixture of vapors of alkali or alkali earth metals
with inert gases. The gas mixture should be at a high temperature, between
500-3,000° depending on the metal used.

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USSR   UDC 669.71.053.2

VODOP'YANOV, A. G., KOZHEUNIKOV, G. M., MIKULINSKIY, A. S., and YEFREMKIN, V. V.

"The Role of Suboxides of Aluminum in Reduction Processes"

V. sb. Vakuumn. protsessy v tsvetn. metallurgii (Vacuum Processes in Non-ferrous Metallurgy -- Collection of Works), Alma-Ata, "Nauka," 1971, pp 213-216 (from Referativnyy Zhurnal - Metallurgiya, No 6, Jun 71, Abstract No 6G142)

Translation of Abstract: A study is made of the interaction of gaseous oxides of lower valent Al with SiO_2 and C at $1450-1700^\circ$ and residual pressure of 15-22 mm Hg. Al suboxides possess reducing and oxidizing properties (Two illustrations)

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Miscellaneous

USSR   UDC 669.782.018.9(088.8)

GUSAROV, V. N., MIKULINSKIY, A. S., RYSS, M. A., GETMANCHUK, V. M.
PIGASOV, S. Ye., BELYAYEV, G. S., BEDOV, I. S., and POMOVTSAYEV, V. N.

"Method of Melting Calcium-Silicon"

Translation: A method is suggested for producing Ca-Si in an electric
arc furnace by reducing CaO with Si-containing material in the presence
of CaF_2 with creation of a reducing atmosphere in the furnace by adding
a C-containing material to the fused charge during the period of Ca
reduction. The charge is fused in the presence of the C-containing
material in order to increase the content of Ca in the melt, while the
Si-containing reducer is introduced after melting.

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134782b   Briquets for silicocalcium production. Korhyernikov
G. N.; Nefedov, P. Ya.; Vorob'ev, V. P.; Rysa ...;
Getmanchuk, V. M.; Zalko, V. P.; Belyev, G. B.; Milinnkii,
A. S. (Ural Institute of Metallurgy, Academy of Sciences,
U.S.S.R.) U.S.S.R. 260,653 (Cl. C 21c), 00 Jan 1970. Appl.
25 Feb 1969; From Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye
Znaki 1970, 47(4), 26. Briquets for silicocalcium production
were made from lime 60–70 and a carboniferous reducing agent
30–40 wt. % to reduce the losses of Si and the consumption of
charge materials.   MBCL

REEL/FRAME

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