

USSR

UDC: 551.510.535

BENEDIKTOV, Ye. A., et al, Izvestiya VUZ -- Radiofizika, vol 15, No 4, 1972, pp 504-509

of the data consisted in obtaining the amplitude distribution function of the signals for various fixed altitudes, and in determining the autocorrelation amplitude functions. The authors express their gratitude to V. V. Tamoykin for his advice and to T. N. Fedoseyeva for her assistance with the computations. They are associated with the Scientific Research Radio Physics Institute.

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1/2 035 UNCLASSIFIED PROCESSING DATE--16OCT70
 TITLE--MEASUREMENT OF THE ELECTRON CONCENTRATION OF THE IONOSPHERE BY THE
 HIGH FREQUENCY IMPEDANCE PROBE METHOD -U-
 AUTHOR--(04)-KOMRAKOV, G.P., IVANOV, V.P., POPKOV, I.V., TYUKIN, V.N.
 COUNTRY OF INFO--USSR **K**
 SOURCE--KOSMICHEKIE ISSLEDOVANIIA, VOL. 8, MAR-APR 1970 P. 278-283
 DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--ELECTRON DENSITY, IONOSPHERE, HIGH FREQUENCY, ANTENNA,
VERTICAL SOUNDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1751

STEP NO--UR/0293/70/008/000/0278/0283

CIRC ACCESSION NO--AP0115580

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115580

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BRIEF DESCRIPTION OF THE EQUIPMENT USED FOR MEASURING THE ELECTRON CONCENTRATION IN THE IONOSPHERE BY THE HIGH FREQUENCY IMPEDANCE PROBE METHOD. USING THE EQUIPMENT DESCRIBED, THE ELECTRON CONCENTRATION IN THE IONOSPHERE IS DETERMINED BY MEASURING CHANGES IN ANTENNA CAPACITANCE AS A FUNCTION OF CHANGES IN THE DIELECTRIC CONSTANT OF THE IONOSPHERE AT TWO FIXED FREQUENCIES. THE ELECTRON CONCENTRATION PROFILE AT ALTITUDES FROM 80 TO 170 KM, OBTAINED WITH THE AID OF THIS EQUIPMENT, IS PRESENTED.

USSR

UDC 535.322.4.08

AYOLLO, E. S., DIMITRIYEV, A. V., KARABEGOV, M. A., KOMRANOV, YU. I., POZHIDAYEV, G. M., SIMONYAN, G. A.

"New Wide-Range Automatic Refractometer for Monitoring the Course of Technological Processes"

Dokl. Vses. soveshch. Optich. i titrometrich. analizatory zhidk. sred. 1971.
Ch. 2 (Reports of the All-Union Conference on Optical and Titrometric Analyzers of Liquid Media, 1971, Part 2), Tbilisi, 1971, pp 39-44 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 3, Mar 72, Abstract No 3.32.1044)

Translation: At the present time, among automatic industrial refractometers, the systems with optical compensation for the deviations of the light beam, displacement of the light shadow interface and under variables which are a function of the index of refraction have become most widespread. The schematic and description of an automatic refractometer developed by the Special Design Office for Analytical Instrument Making are presented. This refractometer permits an increase in the dynamic measurement range by several times while retaining the given instrument error. It also permits a five-fold increase in the accuracy of measuring the concentration of the substances. There are 2 illustrations and 1-entry bibliography.

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UDC 543.45(047)

USSR

AYOLLO, Z. S., DEVDARIANI, M. V., KARABEGOV, M. A., ~~KOMRANOV, YU. I.~~, POZHIDAYEV, G. M.

"General Industrial Automatic Refractometers of the State Instrument System"

Dokl. Vses. soveshch. Optich. i titrometrich. analizatory zhidk. sred, 1971.
Ch. 2 (Reports of the All-Union Conference on Optical and Titrometric Analyzers
of Liquid Media, 1971, Part 2), Tbilisi, 1971, pp 9-20 (from RZh---Metrologiya i
Izmeritel'naya Tekhnika, No 3, Mar 72, Abstract No 3.32.1043)

Translation: The results of interrogating 178 scientific research planning and design organizations and production enterprises representing the parameters of 427 technological media are classified. The interrogation has as its purpose the discovery of the requirements imposed on automatic refractometers for liquid materials. It was found that the automatic refractometers must have technical characteristics insuring their operation under the conditions of variation of the index of refraction from 1.3 to 1.7, a difference range of the index of refraction from $5 \cdot 10^{-4}$ to $1 \cdot 10^{-4}$ with a measurement accuracy no worse than $1 \cdot 10^{-4}$ to $5 \cdot 10^{-4}\%$ at temperatures of the measured medium from +20 to +120°C with fluctuations with respect to a given point from +2 to +5° C. The analysis of the technical characteristics of the existing automatic refractometers
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AYOLLO, Z. S., et al., Dokl. Vses. soveshch. Optich. i titrometrich. analizatory zhidk. sred, 1971. Ch. 2, Tbilisi, 1971, pp 9-20

permits establishment of the fact that the majority of them correspond to the requirements of specific technological processes, and only a few have the possibility of adjustment of the measurement ranges. A survey of methods of varying the measurement ranges of various types of automatic refractometers is presented, and their relative advantages and disadvantages are noted, including modular construction developed by the special design office of automatic refractometers for the DIRP-D and D2RP-D automatic refractometers. The correspondence of these automatic refractometers to the requirements of COST 14941-69 is established. The USSR State Standards Committee gave permission to manufacture the instruments for delivery to the CEMA countries. The instruments are being manufactured by the Kiev Analytical Instrument Plant. There are 2 illustrations and 2 tables.

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UDC 543.544.45:535.322.4.08

AYOLLO, Z. S., DEVDARIANI, I. V., DELYUSTO, V. V., KARABEGOV, M. A., KONENAKOV,
YU. I., MCHEDLISHVILI, K. A.

"Refractometric Detector for Liquid Chromatographs"

Dokl. Vses. soveshch. Optich. i titrometrich. analizatory zhikh. sred. 1971.
Ch. 2 (Reports of the All-Union Conference on Optical and Titrometric Analyzers
of Liquid Media, 1971, Part 2), Tbilisi, 1971, pp 60-65 (from Nauka--Kontrolirovaniya
i Izmeritel'naya Tekhnika, No 3, Mar 72, Abstract No 3.32.1123)

Translation: A model of a refractometric detector developed at the Special Design Office for Analytical Instrument Making is described. The detector is designed for operation with a gel filtration chromatograph. The sensitivity threshold of the gel chromatograph is 10^{-3} - 10^{-4} mg/ml of analyzed component. The sensitivity of the recording differential refractometer when measuring the index of refraction must be no worse than $1 \cdot 10^{-6}$ - $1 \cdot 10^{-7}$. The check of the sensitivity of the refractometer performed with respect to the height of the peak on the chromatograms demonstrated the reliability of the analysis at $5 \cdot 10^{-5}$ mg/ml. The device was developed to investigate the molecular mass distribution of polymers, but the experimental studies demonstrated the possibility of using a differential refractometer (without a chromatograph) for size refractometric measurements. There are 4 illustrations.

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KOMBAKOUA, T. D.

SPR 5 51208
6-73

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XVI-12. SOME LAWS OF FORMATION OF DEFECTS AND TRANSPORT OF AMPLIFIERS DURING GROWTH OF SILICON LAYERS BY SUBLIMATION IN A VACUUM

Article by V. P. Kuznetsov, V. V. Potapov, I. A. Kuznetsov, G. V. Klyuchevskiy, N. A. Borok, I. I. Stepanov, M. P. Potapov, P. I. Ginzburg, Politechnicheskii Universitet, Sverdlovsk, 12717 June 1972, p 2111

Latent silicon layers were grown at temperatures of $T = 520-1,000^{\circ}C$ on silicon with (110) orientation. Distortions of two areas found in the layers. Some arise in the substrates during the experiment and pass into a layer. Their density does not depend on the temperature T . The latter arise more frequently on the film-substrate boundary and are directed according to (110). Their density decreases exponentially with an increase in temperature and linearly with a decrease in growth rate of the layers V . The packing defect density does not depend on the temperature, and in the case 20-30 ml-cm of the substrate V , A_1 and A_2 in the layers on the concentration of impurities is described by the formula $n = A \exp(dT/kT)$ where A is 21 kcal/mol, 35 kcal/mol, 41 kcal/mol and 75 kcal/mol. In the case of phosphorus $A = 0.67$. The dependence of n on V was investigated in this case for all substrates.

Acc. Nr: AP0034072 Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code:

UR 0078

71278u Zinc chloride-gallium trichloride vapor-phase system.
Komsilov, O. N.; Polyachenok, O. G.; Novikov, G. I.
(Beloruss. Tekhnol. Inst. im. Kirova, Minsk, USSR). *Zh.
Neorg. Khim.* 1970, 15(1), 251-4 (Russ). Satd. vapor pressure
(p) of GaCl_3 was detd. and its value agrees with that obtained
by W. Fisher and O. Juebermann (1936). The obtained equil.
const. (K_p) of $(\text{Ga}_2\text{Cl}_6) \rightleftharpoons 2\text{GaCl}_3$ is: $\log K_p$ (mm) = $9.605 \pm$
 $0.051 - (4370 \pm 34)/T(185-538^\circ)$. The values of thermo-
dynamic parameters at 298°K are (compd., ΔH° in kcal/mole,
 ΔS in e.u.): GaCl_3 , -106 ± 2.3 , 77.3 ± 1.5 ; (Ga_2Cl_6) , $-223 \pm$
 2.5 , 122.5 ± 1.5 . Analogous study was made for $(\text{Zn}_2\text{Cl}_4) \rightleftharpoons$
 2ZnCl_2 system. $\log p$ of ZnCl_2 is $8.808 - 6032/T$ ($500-700^\circ$)
and $\log K_p$ of dimerization is $9.44 - 5600/T$. Vapor pressure
of ZnCl_2 - GaCl_3 system indicates absence of chem. interaction
between the components in the vapor phase. HMJR

REEL/FRAME

19710715

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--AZIMUTHAL FUNCTIONS OF THE EXTENT OF POLARIZATION OF SEPARATE LINES
IN THE LUMINESCENCE SPECTRA OF URANYL COMPOUND CRYSTALS -U-
AUTHOR--(03)--VOLODKO, L.V., KOMYAK, A.I., POSLEDOVICH, M.R.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 567-71
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--URANIUM COMPOUND, POLARIZATION, SINGLE CRYSTAL, LUMINESCENCE
SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1534 STEP NO--UR/0048/70/034/003/0567/0571
CIRC ACCESSION NO--AP0125162
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSIGN NO--AP0125162

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLARIZATION OF THE MORE INTENSE LINES IN THE SPECTRA OF CSUD SUB2(NO SUB3) SUB3, RB SUB2UD SUB2(NO SUB3) SUB4, AND (NH SUB4) SUB2UD SUB2(NO SUB3) SUB4 SINGLE CRYSTALS WERE STUDIED IN ALL DIRECTIONS AROUND THE CRYSTAL AXIS BY A PREVIOUS METHOD (A. I. KOMYAK, ET AL., 1970). THE RESULTS ARE DISCUSSED FROM THE POINT OF VIEW OF A 3 DIMENSIONAL OSCILLATOR MODEL.
FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--LUMINESCENCE AND ABSORPTION SPECTRA OF URANYL CHLORIDE CRYSTALS IN
POLARIZED LIGHT -U-
AUTHOR--(03)-KONYAK, A.I., SEVCHENKO, A.N., SIDORENKO, M.M.
COUNTRY OF INFO--USSR **K**
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 567-81
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CHLORIDE, CRYSTAL, URANIUM COMPOUND, LUMINESCENCE, ABSORPTION
SPECTRUM, LIGHT POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1533 STEP NO--UR/0048/70/034/033/0576/0581

CIRC ACCESSION NO--AP0125161

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125161

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LUMINESCENCE AND ABSORPTION SPECTRA OF CS SUB2 UO SUB2 CL SUB4 CRYSTALS WERE DETD. AT 77DEGREEEK AND THE EFFECT OF LIGHT POLARIZATION DISCUSSED. THE ELECTRON VIBRATION LEVELS OF (UO SUB2 CL SUB4) PRIME2 NEGATIVE WERE DETD. AND THE RESULTS OF KHARITONOV AND KNYAZEVA WERE USED FOR THE ASSIGNMENT OF SPECTRAL LINES TO INDIVIDUAL VIBRATIONS. FACILITY: BELORUSS, GDS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED

USSR

UDC 620.179.15

KOMYAK, N. I. and PELIKS, YE. A.

"Nanosecond Impulse X-Ray Unit Type RINA-1D for Non-Destructive Testing of Materials Under Unstable Conditions"

Sverdlovsk, Defektoskopiya, No 4, Jul-Aug 72, pp 127-131.

Abstract: A portable nanosecond impulse x-ray unit is described and the basic recommendations on selection of interelectrode gap in the x-ray tube and main parameters of high voltage source are presented for providing short x-ray scintillations.

Comparative tests were conducted in 1971 for the PINA-1D and an American unit--the Bend 1 X-Ray-105. Results of these tests are as follows:

	<u>RINA-1D</u>	<u>Bend 1</u>
Operating voltage in x-ray tube, kv.....	200	110
Impulse radiation time, nsec.....	20	40
Thickness of x-rayed steel, mm.....	20	4
Frequency of x-ray trace, hz.....	15	4
Focus point diameter, mm.....	3	1.5
Solid radiation angle, deg.....	150	35
X-ray tube service life, impulses.....	200,000	20,000
Weight of x-ray unit, kg.....	5	5.2

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KOMYAK, N. I. and PELIKS, YE. A., Defektoskopiya, No 4, Jul-Aug 72, pp 127-131

The authors thanked V. A. TSUKERMAN and N. V. BELKIN for assistance and valuable counseling in this project. 5 figures, 1 table, 5 bibliographic references.

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1/2 040 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--MEASUREMENT OF THE SPATIAL TEMPORAL STRUCTURE OF THE HIGH FREQUENCY
COMPONENTS OF WIND SWELL -U-
AUTHOR--(02)-KUMYAYEV, K.V., NAZAROV, A.A. *K*
COUNTRY OF INFO--USSR
SOURCE--AKADEMIYA NAUK SSSR, IZVESTIYA, FIZIKA ATMOSFERY I OKEANA, VOL 6,
JAN. 1970, P 104-110
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES, ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--ANTENNA ARRAY, HIGH FREQUENCY, WIND DIRECTION, ATMOSPHERIC
WIND, WAVE PROPAGATION, SPACE TIME
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/1908 STEP NO--UR/0362/70/006/000/0104/0110
CIRC ACCESSION NO--AP0108239
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108238

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF THE USE OF A TWO DIMENSIONAL ANTENNA ARRAY TO MEASURE THE HIGH FREQUENCY COMPONENTS OF WIND SWELL ON A BACKGROUND OF STRONG LOW FREQUENCY COMPONENTS. THE EXPERIMENTAL ARRAY STRUCTURE CONSISTED OF STRING TYPE WIRE SENSORS ARRANGED IN EIGHT ROWS OF 12 SENSORS EACH. THE ARRAY WAS FED BY DC SIGNALS, AND SPECTRAL ANALYSIS OF WIND SWELL WAS PERFORMED BY USING BOTH THE SIGNALS FOR THE ENTIRE ARRAY AND FOR AN INDIVIDUAL SENSOR. MEASUREMENTS WERE PERFORMED IN A WEAK, RELATIVELY CONSTANT WIND WHOSE DIRECTION COINCIDED WITH THAT OF WAVE PROPAGATION. GRAPHICAL DATA ARE GIVEN FOR THE ENERGY SPECTRA OF ARRAY SIGNALS AT DIFFERENT ORIENTATIONS AND WAVELENGTHS.

UNCLASSIFIED

KOMZALOVA, G. N.

PHYSIOLOGIC AND HISTOLOGIC EVALUATION OF EXPERIMENTAL SAMPLES OF COSMETICS

Article by V. V. Zhidkov, L. S. Boltikova, V. P. Gorobkov, G. A. Shumilina and G. N. Komzalova, Moscow, Akademiya Voprosy Kosmeticheskoy Promyshlennosti i Meditsiny (Soviet Periodic In Space Biology and Medicine), Russian, 1971, pp 111-113

The composition of the lotions L-210, L-211 and the elixirs E-320, E-321 was tested in two isolation chamber experiments lasting 22 and 30 days in which the atmosphere and microclimate were carefully controlled.

In the first experiment there were three groups of subjects, two in each group. Over a 10-day period the first group used L-210 lotion for care of the skin and the hairy part of the head; elixir E-320 was used for care of the oral cavity. Over a 10-day period the second group used L-211 lotion and E-321 elixir, whereas the third group performed all hygienic procedures using SES-3 lotion.

In the second experiment, during the first 17 days the three subjects used L-210 lotion and E-320 elixir, on the next three days -- lotion SES-3, and during the concluding 10-day period -- L-211 lotion and E-321 elixir.

Shaving was with a safety razor and "Uspeshn" shaving creams of the "Sisano" and "Svoboda" types.

The schedule for using these items of personal hygiene was drawn up taking into account the restrictions character- istic for space flights with a duration from one to three months. The mean daily expenditure by one subject was 79 G of lotion, 7 G of elixir, and 10 G of shaving cream.

Over a five-month period we checked the possibility of long-term storage of L-211 lotion and E-321 elixir in rooms

SPRS 52.499
14 JULY 72

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USSR

UDC 621.371:535

KLYATSKIN, V. I., ~~KON, A. I.~~, Institute of Physics of the Atmosphere of the USSR Academy of Sciences

"Displacements of Spatially Limited Light Beams in a Turbulent Medium in the Approximation of a Random Markov Process"

Gor'kiy, Izvestiya, vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 9, 1972, pp 1381-1388

Abstract: A study was made of the problem of fluctuations of the position of the center of gravity of a light beam in a randomly inhomogeneous medium in the approximation of a Markov random process. The mean square displacement of the center of gravity is defined for a turbulent model of the medium and a gaussian beam. In the far zone these expressions differ significantly from the ones obtained in the approximation of the smooth perturbation method.

The basic apparatus developed by V. I. Tatarskiy [Rasprostraneniye korotkikh voln v srede so sluchaynymi neodnorodnostyami v priblizhenii markovskogo sluchaynogo protsessa, USSR Academy of Sciences, Department of Oceanology, Physics of the Atmosphere and Geography, Preprint, 1970] was used to calculate the displacements of the center of gravity of the light beams. The fluctuations of the position of the center of gravity are defined by two effects:

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KLYATSKIY, V. I., et al., Izvestiya, vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 9, 1972, pp 1381-1388

the mean broadening of the beam and the fluctuations of the intensity with respect to the same broadening of the mean profile. The first effect is the primary one, and a mathematical description of it is presented. A graph of the function $f(\beta)$ obtained as a result of numerical integration of the turbulent spectrum of the fluctuations of the dielectric constant is presented where $\beta = \alpha C^2 k^{1/3} x^{8/3} a^{-5/3}$ ($\alpha = 0.27$, k is the wave number, x is the two-dimensional field vector, a is the beam width).

2/2

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Electromagnetic Wave Propagation

USSR

UDC: 621.371.255

KON, A. I. and TATARSKIY, V. I., Institute of Atmospheric Physics

"Theory of the Propagation of Partially Coherent Light Beams in a Turbulent Atmosphere"

Gor'kiy, Izvestiya VUZ--Radiofizika, No 10, 1972, pp 1547-1554

Abstract: An analysis is made of the effect of turbulent fluctuations in dielectric permeability on the characteristic of a light beam describing it by a second-order coherence function. In most theoretical descriptions of light propagation in a nonuniform medium, purely coherent radiation sources are considered. However, the degree of coherence often turns out to be the decisive factor. Thus, sources of partially coherent radiation in a turbulent medium are considered in this article along with the effect of the degree of coherence on the light-beam characteristic. The analysis begins with the expression for the coherence function of a fully coherent source and a solution for that expression. The case of a partially coherent source is then discussed, and an approximation equation for the structural function of the dielectric permeability is found. An expression is also obtained for the

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KON, A. I., et al, Izvestiya VUZ--Radiofizika, No 10, 1972, pp 1547-1554

average intensity of the radiation at the beam axis; curves for the ratio between this intensity for partially and fully coherent beams are plotted.

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Acc. Nr: **AP0043928**

Abstracting Service: **5/70**
INTERNAT. AEROSPACE ABST.

Ref. Code:
4R 0141

K
A70-23139 # Fluctuations of the parameters of spherical waves propagating in a turbulent atmosphere (Fluktuatsii parametrov sfericheskikh voln, rasprostraniayushchikhsia v turbulentnoi atmosfere). A. I. Kon and Z. I. Feizulin (Akademiia Nauk SSSR, Institut Fiziki Atmosfery, Moscow, USSR). *Radiotizika*, vol. 13, no. 1, 1970, p. 71-74. 6 refs. In Russian. **ZZVVUZ**

The amplitude and phase correlations of two spherical waves are calculated in the approximation of the smooth perturbation method. The case considered is when the sources are at some distance from the turbulent layer and the observation points are spaced. (Author)

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REEL/FRAME
19770354

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Acc. Nr.: AT0042699

Ref. Code: UR0141

K

JPRS 50162

Light Focusing in a Turbulent Medium

(Abstract: "Light Focusing in a Turbulent Medium," by A. I. Kon, Institute of Physics of the Atmosphere; Gor'kiy, Izvestiya Vysshikh Uchebnykh Zavedeniy, Radiofizika, Vol XIII, No 1, 1970, pp 61-70)

A study was made of the effect of nonuniformities of the refractive index behind a lens on the parameters of a focused wave. Formulas are derived for the random coordinates of the "center of gravity" of the image in the focal plane of the lens and are used for computing the mean square of the fluctuations of the "center of gravity" of the diffraction pattern. Formulas are derived for the mean intensity of light both on the axis of the lens and at the randomly moving point of the image "center of gravity." The author computed the profile of mean intensity in a moving coordinate system related to the center of gravity of the diffraction pattern. The results of numerical computations are presented. The results contradict some of the findings given by D. L. Fried, et al. in J. Optical Society America, 57, No 2, 1967, 312; the reasons for the discrepancies are discussed.

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Reel/Frame
19760806

21

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USSR

UDC: 537.312.62

GOLUB, A. A. and LOV, I. Z.

"More on Superconductivity Theory in Semiconductors"

Kishinev, V sb. Issled. po kvant. teorii sistem mnogikh chastits
(Investigating Systems of Many Particles by the Quantum Theory)
1971, pp 27-32 (from RZh--Radiotekhnika, No 4, 1972, Abstract No
4D486)

Translation: Equations for determining the energy gap are obtained from the minimum thermodynamic potential conditions. The case of zero temperature is considered. The interactions leading to superconductivity are expressed through the full dielectric permeability of the crystal and do not contain resonance denominators. Bibliography of twelve. Resume

1/1

1/2 039

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--ULTRASONIC ATTENUATION IN CURRENT CARRYING SUPERCONDUCTORS
CONTAINING PARAMAGNETIC IMPURITIES -U-

AUTHOR--(02)--KOLPAGIU, M.K., KGN, L.Z.

K

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 39, NR1, PP 61-65

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ULTRASONIC ABSORPTION, SUPERCONDUCTOR, PARAMAGNETIC MATERIAL,
IMPURITY CENTER, ABSORPTION COEFFICIENT, SOUND WAVE, LOW FREQUENCY, LOW
TEMPERATURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1441

STEP NO--GE/0030/70/039/001/0061/0065

CIRC ACCESSION NO--AP0112435

UNCLASSIFIED

2/2 039

CIRC ACCESSION NO--AP0112435

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN INVESTIGATION IS MADE OF THE ULTRASONIC ATTENUATION IN SUPERCONDUCTORS CARRYING PERSISTENT CURRENTS IN THE PRESENCE OF PARAMAGNETIC IMPURITY SCATTERING. THE LIMITING CASE OF HIGH IMPURITY CONCENTRATIONS IS CONSIDERED. GENERAL EXPRESSIONS FOR THE ATTENUATION COEFFICIENTS ARE OBTAINED IN THE CASE OF SPACE INDEPENDENT SOUND WAVES. THE ATTENUATION COEFFICIENTS AT RELATIVELY LOW FREQUENCIES AND LOW TEMPERATURES ARE EVALUATED EXPLICITLY. GAPLESS SUPERCONDUCTORS ARE ALSO CONSIDERED. FACILITY: INSTITUTE OF APPLIED PHYSICS, ACADEMY OF SCIENCES OF THE MOLDAVIAN SSR, KISHINEV.

UNCLASSIFIED

USSR

MOSKALENKO, V. A., et al, Fizika Metallov i Metallovedeniye, Vol. 30, No. 3, Aug 70, pp 285-294

superconductors with nonmagnetic impurity at the upper concentration limit. Dispersion of the sound wave is not taken into consideration.

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USSR

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R001401420015-3"

MOSKALENKO, V. A., COLES, A. A., and ROSE, L. A., Fizika Metallov i Metallovedeniye, Vol. 30, No. 3, Aug 70, pp 285-294
AN Moldavian SSR

"Absorption of Ultrasound in Dual-Zone Superconductors With Nonmagnetic Impurity"
Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 3, Aug 70, pp 285-294

Abstract: The method of acoustical absorption is widely used for the investigation of the energy spectrum of superconductors. Earlier works have developed the theory of absorption of ultrasound in single-zone anisotropic superconductors. Still other works have considered the multizoned structure of superconductors in the spectrum during the investigation of the absorption of ultrasound. In contrast to these works, the present work studies the absorption of ultrasound in dual-zone superconductors, taking into account the scattering of electrons on impurity atoms between zones. This scattering leads to significant changes, even with low impurity concentrations. For example, only one slit appears instead of the usual two slits in the energy spectrum, the electron densities of the states of each zone near the slit depend significantly on the concentration of impurity atoms, etc. The ratio of ultrasonic absorption coefficients α_g/α_n is calculated in the superconducting and normal states of dual zone
1/2

UDC 541.183.03

USSR

MARDALEYSHCHVILI, R. YE., DANELIYA, A. P., ~~KOMI, M. YA.~~

"Adsorption Capacity of Higher and Lower Oxides of V, U and Mn
Obtained by Interconversion"

Vestnik Moskovskogo Universiteta, Khimiya, No 4, 1971, pp 387-397

Abstract: The absolute numbers of He and O adsorption centers and the ratio of these numbers change with changing surface areas during oxidation-reduction conversions of the higher and lower oxides of metals. Specimens of three metals were studied: vanadium (V_2O_5 , V_2O_4 and V_2O_3), uranium (UO_3 , U_3O_8 and UO_2) and manganese (MnO_2 , Mn_3O_4 and MnO). It was found that when oxidation or reduction is performed at temperatures providing low process rate, the number of Me centers on the surface does not change, while the number of O centers changes to the same extent as the change in the number of atoms (ions) of oxygen in the oxide produced.

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USSR

MARDALEYSHVILI, R. Ye., DANELIYA, A. P., KON', M. Ya.

"Adsorption Capacity of Higher and Lower Oxides of Y, U and Mn Produced by Mutual Conversions"

Vestn. Mosk. Un-ta. Khimiya [Herald of Moscow University, Chemistry], Vol 12, No 4, 1971, pp 387-397 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 B1506 by S. Grigorovich).

Translation: The change in the surface of oxides of vanadium (V_2O_5 , V_2O_4 and V_2O_3), uranium (UO_3 , U_3O_8 and UO_2) and manganese (MnO_2 , Mn_3O_4 and MnO) during mutual adsorption-reversible redox conversions of the oxides is studied by the method of adsorption of N_2 , H_2 , Ar, NH_3 , O_2 , $(C_2H_5)_2O$ and CO from the gas phase. It is shown that during these conversions, the absolute quantity of Me and O adsorption centers and their relationships are changed, while the share of surface atoms in relationship to the total number of atoms in the adsorbent does not change. In the opinion of the author's, the Me/O ratio is identical on the surface and in the volume of stoichiometric oxides. It is suggested that the degree of development of the surface be characterized by the ratio of the number of surface atoms, determined by the adsorption method, to the total number of atoms in the specimen of adsorbent.

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1/2 036 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--CONTRIBUTION OF PHONON ABSORPTION TO THE ANOMALOUS TRANSMISSION OF
X RAYS --U-
AUTHOR--~~KON, V.G.~~ *K*
COUNTRY OF INFO--USSR
SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 20-4
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PHONON INTERACTION, X RAY SCATTERING, X RAY ABSORPTION,
INELASTIC SCATTERING, ALUMINUM, INDIUMANTIMONIDE, TEMPERATURE
DEPENDENCE, ABSORPTION EDGE, SILICON, NICKEL, COPPER, GERMANIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1980/0160 STEP NO--UR/0070/70/015/001/0020/0024
CIRC ACCESSION NO--APO048452
UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0048452

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CORRECTIONS TO THE COEFF. OF ANOMALOUS ABSORPTION OF X RAYS CORRESPONDING TO INELASTIC SCATTERING ON PHONONS WERE CALCD. FOR AL AND INSB CRYSTALS AT 0.71 ANGSTROM FOR MO K ALPHA IRRADN. AND FOR SI, NI, CU, AND GE CRYSTALS AT 1.54 ANGSTROM FOR CU K ALPHA IRRADN. THE TEMP. DEPENDENCE OF THESE CORRECTIONS DOES NOT HAVE DEBYE WALLER CHARACTER. THE CONTRIBUTION OF THE PHONON ABSORPTION TO THE WHOLE ABSORPTION COEFF. AMTS. TO SEVERAL PERCENT, AND IS THE HIGHEST FOR CRYSTALS LYING NEAREST TO THE ABSORPTION EDGE OF THE WAVELENGTH OF A GIVEN IRRADN.

UNCLASSIFIED

USSR

KELLER, F. E., SHEKHOVTSOV, O. I., KON, Ye. L.

"Testing One Class of Coding and Decoding Device"

Izv. Leningr. Elektrotekhn. In-ta. [Works of Leningrad Institute of Electrical Engineering], 1972, No 118, Part 1, pp 161-165 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V786).

Translation: Methods are suggested for testing the operation of coding and decoding devices modeling graphs of code intersections of redundant codes.

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USSR

KONAKOV, V. D.

"Nonparametric Estimation of Conditional and Partial Moments"

Teoriya Veroyatnostey i yeye Primeneniya [The Theory of Probabilities and Its Applications], 1973, Vol 18, No 2, pp 440-442 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V146)

Translation: The estimation of partial and conditional moments $\int y^k f(x, y) dy$, $\int (y - E(y|x))^k f(y|x) dy$ on the basis of the sample $(X_1, Y_1), \dots, (X_n, Y_n)$ with density $f(x, y)$ is studied. Several theorems are formulated on the asymptotic properties of estimates, based on a density estimate of the form

$$\hat{f}_n(x, y) = \frac{1}{nb^2(n)} \sum_{1 < j < n} h \left(\frac{x - X_j}{b(n)}, \frac{y - Y_j}{b(n)} \right)$$

D. Chibisov

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Acc. Nr:

AP0048289

Abstracting Service:

CHEMICAL ABST. 5170

Ref. Code:

4R 0472

K

93971s Use of an asymptotic method for studying the movement of a melt during normal crystallization. Kouakov, Yu. P. (USSR). *Fiz. Khim. Obrab. Mater.* 1970, (4), 147-50 (Russ). The flow of a melt near the surface of a single crystal obtained in normal crystn. under conditions when the crucible and the crystal revolve in opposite directions, was calcd. At a const. angular velocity of the crystal ω_c , increasing the angular velocity of the crucible ω_k lowered the radial and the axial flow of the boundary layer. The calcd. results agree with exptl. values in the range of $\beta = \omega_k/\omega_c$ from -0.6 to 1, [Verevochkin, *et al.*, 1969]. But at $\beta < -0.6$ the flow of ions approaching the electrode decreased and passed through a min. at $\beta \approx -0.0$. GBJR

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19792011

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USSR

UDC 778.37

DUBOVIK, A. S., SITSINSKAYA, N. M., and KONAKOVA, M. B., Institute of Physics of the Earth

"The SFR-Mikro High-Speed Microscopic Photography Camera"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinetografii, Vol 17, No 3, 1972, pp 174-177

Abstract: The Institute of Physics of the Earth has developed the SFR-Mikro camera on the basis of the series-produced Soviet SFR camera, by means of the introduction of minor changes in its optical system. The instrument can be used as a photographic recorder, with magnification of from 1 to 26X and as a time magnifier with a range of from 1 to 118X. The basic technical specifications are presented, among which is included the information that at a mirror rotation of 3000 to 7500 rpm the camera takes 25,000 to 625,000 frames per second using a two-row lens insert and high-speed lens insert, and 100,000 to 2,500,000 frames per second using a four-row lens insert; the frame diameter is 10 mm with a high-speed lens insert and a two-row lens insert, and it is 5 mm with a four-row lens insert. Optical diagrams of both variants are presented, as well as results of tests on a working model. 2 tables, 2 figures. 5 references.

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USSR

UDC 621.38.836.112.15c24

BERKOVSKAYA, K.F., KIRILLOVA, N.V., KONAKOVA, R.V., KRASYUK, B.A., MESKIN, S.S.,
RAVICH, V.N., SOBOLEV, V.I., SHUMAN, V.B.

"Opticoelectronic Pair, Light-Emitting Diode--Photthyristor: New Element Of
Electronic Apparatus"

V sb. Mikroelektronika (Microelectronics--Collection Of Works), Moscow, Izd-vo
"Sovetskoye Radio," No 4, 1971, pp 216-228

Abstract: The possibilities are analyzed of a new type of opticoelectronic pair, GaAs light-emitting diode--Si photthyristor. The characteristics and parameters are furnished of light-emitting diodes and photthyristors of various types. The possibilities of their optimum combination are considered. Specific regimes of operation are recommended and the parameters of the opticoelectronic pair are presented for three regimes of operation. 6 fig. 3 tab. 8 ref.

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Acc. Nr.: ARO101983

Ref. Code: UR0000

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JPRS 50248

UDC 621.383:621.382.2/.3

USSR

KONAKOVA, R. V., and SHUMAN, V. B.

"Six-layer Photothyristor"

V sb. Materialy dokl. V nauchno-tekhn. konferentsii Kishinevsk. polit-ekh. in-ta (Material from Reports of the V-th Scientific-Technical Conference of the Kishinev Polytechnical Institute -- Collection of Works), Kishinev, 1969, p 129 (from RZh-elektronika i yeye primeneniye, No 1, Jan 70, Abstract No 1B207)

Translation: The six-layer photothyristor principally differs from the four-layer by the presence of two collectors, thanks to which one group of p-n junctions assures high photosensitivity, and the other high blanking voltage. The photosensitivity of thyristors was investigated, and its dependency on geometrical and voltampere characteristics. It was determined that better characteristics are possessed by thyristors with a large life time of the superficial carriers in the bases.

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1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SPECTRAL CHARACTERISTICS OF FOUR LAYER SILICON STRUCTURES -U-

AUTHOR--(03)--BERKOVSKAYA, K.F., KIRILLOVA, N.V., KONAKOVA, R.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 396-8

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SPECTRAL ENERGY DISTRIBUTION, SILICON, THYRISTOR, PN JUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0432

STEP NO--UR/0449/70/004/002/0396/0398

CIRC ACCESSION NO--AP0116098

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116098

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHOTOTHYRISTORS WERE STUDIED (MADE FROM N-SI, WITH RESISTIVITY 80 OHM-CM; AN N-P-N-P SWITCH WAS REALIZED BY A CONSECUTIVE DIFFUSION OF AL AND P, NAMELY THE INFLUENCE OF THE JUNCTION POSITIONS AND OF THE LIFETIME OF ELECTRONS IN P- AND N-BASES ON THE SPECTRAL SENSITIVITY. THE SPECTRAL CHARACTERISTIC OF SUCH A THYRISTOR DEPEND ON ALL PARAMETERS OF THE 4 LAYER STRUCTURE; ALSO, THE CHARACTERISTIC CAN BE INFLUENCED BY THE LIFETIME OF MINORITY CARRIERS IN THE BASES. THE MAX. OF THE SPECTRAL SENSITIVITY (λ_{SUBMAX}) CAN BE SHIFTED MAINLY BY THE POSITION OF THE 2ND JUNCTION: λ_{SUBMAX} EQUALS 9450 AND 9800 ANGSTROM FOR 10 AND 90 NU, RESP. FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.382.3

GREKHOV, I.V., KONAKOVA, R.V., SHUMAN, V.B.

"Operating Principle of a Multicollector Photothyristor"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 969-970

Abstract: This article contains a discussion of the operating principle of a multicollector photothyristor. The advantages of the multicollector photothyristor over the four-layer photothyristor are discussed. It is pointed out that the photosensitivity of the multicollector structure exceeds the sensitivity of the four-layer photothyristor several times. Curves are presented for the relative sensitivity as a function of depth of the collector p-n junction of the two-collector photothyristor. Current and voltage diagrams are presented for the two-collector photothyristor during the inclusion process. From these diagrams it is obvious that the transient process of inclusion of the multicollector photothyristor is subdivided into two sections: the first represents inclusion of the $n_1-p_1-n_2-p_2$ structure, and the second, inclusion of the $n_2-p_2-n_3-p_3$ structure. With an increase in steepness of growth of the light flux or an increase in radiation power from the GaAs of the diode the steepness of the inclusion front increases in both sections. This indicates the increasing magnitude of the capacitive current of the multicollector structure and, consequently, the decrease in inclusion

time of the structure. The magnitude of the capacitive current can be
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GREKHOV, I.V., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970,
pp 969-970

estimated at 100 milliamps on the basis of known values of $C_j \approx 200$ picofarads and $dV/dt \approx 500$ volts/microseconds. This estimate of the capacitive current indicates that its magnitude exceeds that of the minimum inclusion current of the multicollector structure controlled by an electric pulse (on the order of a milliampere for the investigated structures) by several times. Thus, the presence of the dV/dt effect in the multicollector structure permits an increase in photosensitivity of the multicollector photothyristor by comparison with the four-layer photothyristor. The dependence of the inclusion time of the multicollector structure on the electrophysical and circuit parameters has the same nature as in the n-p-n-p photothyristor.

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USSR

UDC 621.383:621.382.2/.3

K
KONAKOVA, R. V., and SHUMAN, V. B.

"Six-layer Photothyristor"

V sb. Materialy dokl. V nauchno-tekhn. konferentsii Kishinevsk. polit-ekh. in-ta (Material from Reports of the V-th Scientific-Technical Conference of the Kishinev Polytechnical Institute -- Collection of Works), Kishinev, 1969, p 129 (from RZh-elektronika i yeye primeneniye, No 1, Jan 70, Abstract No 1B207)

Translation: The six-layer photothyristor principally differs from the four-layer by the presence of two collectors, thanks to which one group of p-n junctions assures high photosensitivity, and the other high blanking voltage. The photosensitivity of thyristors was investigated, and its dependency on geometrical and voltampere characteristics. It was determined that better characteristics are possessed by thyristors with a large life time of the superficial carriers in the bases.

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2 012 UNCLASSIFIED PROCESSING DATE--1806170
TITLE--MAGNETOOPTICAL METHOD FOR STUDYING PHOSPHORIC ACIDS -U-

AUTHOR--(05)-BORISOV, V.M., MASLENNIKOV, B.M., SAMOYLOV, V.A., GUBAREVA,
L.N., KONANYKHINA, L.N.
COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. MOSCOW 1970, 46(3), 190-1.

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

KEYWORD TAGS--PHOSPHORIC ACID, MAGNETOOPTIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

COPIES REEL/FRAME--1996/0886

STEP NO--UR/0064/70/046/003/0190/0191

ARC ACCESSION NO--AP0118055

UNCLASSIFIED

72 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

RC ACCESSION NO--AP0118055

STRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGE IN VERDET'S CONST. DELTA DELTA OF AQ. POLYPHOSPHORIC ACID SOLNS. WAS TRACED (AS A FUNCTION OF P SUB2 O SUB5 CONCEN.) AT 35DEGREES AND A WAVELENGTH OF 500 NM; DELTA DELTA INCREASED FROM 10 TIMES 10 PRIME NEGATIVE5 AND THEN DECREASED TO 25 TIMES 10 PRIME NEGATIVE5 MIN-CM SEC WHEN THE P SUB2 O SUB5 CONCEN. WAS INCREASED FROM 10 TO 40 TO 70 WT. PERCENT, RESP., AND INCREASED CONTINUOUSLY AT HIGHER P SUB2 O SUB5 CONCNS.

UNCLASSIFIED

USSR

UDC 539.257:669.24

ZMIYEVSKIY, V. I., YEGOROV, V. N., PYATYSHEV, L. I., ZAMHATSKIY, Ye. P.,
KONARDI, G. G. (Kaliningrad, Moskovskaya Oblast)

"Methods of Evaluating the Mechanical Properties and Structural Strength of
Metal Materials at Low Temperatures"

Kiev, Problemy Prochnosti, No 12, December 1971, pp 26-29

Abstract: In the present article is briefly considered the state of the
question with respect to each test category, previously conducted projects are
described, and problems concerning further developments are presented on the
basis of discussion. An analysis is given of the procedures for determining
the mechanical characteristics of materials at temperatures down to 20° K
(tests for elongation, and tests for impact viscosity with a previously created
fatigue crack). Diagrams are presented for installations used in hydraulic
and pneumatic tests of containers at a temperature of 20° K. 6 figures.
3 references.

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Information Theory & Pattern Recognition

USSR

UDC: 681.325.65

IGNATOV, V. A., KONAREV, A. P., PETROPOL'SKIY, N. V., POLYAK, L. M.

"An Angle-to-Code Converter"

USSR Author's Certificate No 327509, filed 21 Apr 69, published 10 Apr 72
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan
73, abstract No 1B459 P)

Translation: Converters for changing shaft position to code are known which contain a phase shifter; a power supply; an amplifier; and a series circuit comprised of a null detector, control module, square pulse generator, frequency dividers, flip-flops, coincidence gates, and a register. The register input is connected to the output of the control module, and the output is connected through a coincidence gate to the output of one of the frequency dividers. A disadvantage of such converters is the high error rate of conversion.

To reduce conversion error, the proposed converter contains an additional multiple-pole phase shifter and two parallel networks made up of an amplifier, null detector, flip-flop, coincidence gate, OR gate, and pulse counter connected in series. The inputs of these networks are connected

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USSR

IGNATOV, V. A., USSR Authors Certificate No 327509

to the outputs of the main and auxiliary phase shifters respectively, and the outputs are connected to the input of the register.

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1/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ABSENCE OF THE 11 S COMPONENT IN GLOBULINS OF WILD SPECIES OF SOJA
HISPIDA -U-
AUTHOR--(03)-GAVRILYUK, I.P., SATBALDINA, S.T., KONAREV, V.G.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1229-31
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PLANT PHYSIOLOGY, GLOBULIN, PROTEIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1668 STEP NO--UR/0020/70/190/005/1229/1231
CIRC ACCESSION NO--AT0133573
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0133573

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEEDS FROM 14 SPECIMENS OF CULTIVATED SOYBEAN PLANTS AND 13 OF WILD VARIETIES WERE USED AS PROTEIN SOURCE. THE EXTD. PROTEIN MASS WAS DIALYZED AND SUBJECTED TO IMMUNOELECTROPHORETIC ANAL. THE SALT AND WATER EXTRACTABLE FRACTIONS OF THE SEED PROTEINS FROM THE WILD PLANT VARIETIES LACK THE 11 S FRACTION WHICH IS PRESENT IN THE CULTURED VARIETIES. THE SEEDS OF G. USSURIENSIS CONTAIN A PROTEIN THAT IS CLOSE IN STRUCTURE TO THE 11 S COMPONENT OF GLYCINE MAX GLOBULINS AND POSSIBLY ACTS AS ITS PRECURSOR.
FACILITY: VSES. INST. KASTENIEVOO IM. VAVILOVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 632.95

KONASHEVICH, V. A., Chief of the Division of Control, Main Administration of Plant Protection, Ministry of Agriculture RSFSR; and TOLKACHEVA, M. S., Chief Chemist, Main Administration, State Commission on Chemical Agents

"Granulated Insecticides"

Moscow, Zashchita Rasteniy, No 5, May 73, pp 30-31

Abstract: The action of granulated insecticides that are to be applied to the soil is exerted in the zone in which seeds or recently germinated seeds are located. The superphosphate contained in these insecticides strengthens the young plant and makes it more resistant to pests. Among the granulated insecticides is 2% large-grained gamma-hexachlorocyclohexane (HCCH) that consists of 95% granulated superphosphate which is coated with 2-2.6% gamma-HCCH by means of 2.5% methylnaphthalene fraction acting as a solvent for the HCCH. It is used mainly for the protection of grain cultures. The 2% fine-grained gamma-HCCH is similar in composition, but the grain size is smaller (0.25-2 vs 0.5-3 mm). The 4% fine-grained gamma-HCCH contains 3% gamma-HCCH, 5% methylnaphthalene fraction, and 90% ordinary or ammonised superphosphate. Its

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USSR

KONASHEVICH, V. A., and TOLKACHEVA, M. S., Zashchita Rasteniy, No 5, May 73, pp 30-31

principal use if protection of cotton plant shoots against larvae of the turnip moth. 1.6% granulated phosphamide is ammonized superphosphate (grain size 1-2 mm) that contains 1.6-1.8% of the systemic insecticide phosphamide (rogor). It is recommended for the protection of sugar beets, feed cruciferae crops (turnips and swede), and alfalfa. Phosphaman is similar, except that 1% gamma-HCH has been added to increase the effectiveness.

2/2

- 22 -

RONASOV, F. I.

(Co1)

Mi)

COMBAT ACTION OF A MOTORIZED RIFLE BATTALION IN A CITY

DOC: 355,425

[Excerpts from book by Maj Gen A. K. Snowglovich, Col F. I. Ronasov, and Col S. I. Zashch, Boevyye Deystviya Motostrelkovogo Batal'ona v Gorode (Combat Action of a Motorized Rifle Battalion in a City), Military Press, Russian, 1971, signed to press 30 March 1971, 192 pp.]

Title Page

Boevyye Deystviya Motostrelkovogo Batal'ona v Gorode (Combat Action of a Motorized Rifle Battalion in a City).

Signed to Press: 30 March 1971. Number of copies: 4000.

Brief Description

Distinguishing aspects of organization for and conduct of offensive and defensive combat waged by subunits (podrazdeleniya) in a city when urban nuclear missiles or only conventional weapons are employed are described in this book. Concrete tactical examples are described to demonstrate the work of the commander of a motorized rifle battalion and his staff in organizing for offensive and defensive combat in a city and in controlling subunits of a battalion during the course of combat. Theoretical questions as well as the practical work of a commander and his staff are described based on the experience gained in the Great Patriotic War and postwar troop exercises. The views held in foreign armies as described in the book are based on materials published in the open foreign press. The book is intended for use by officers in motorized rifle units as an aid in preparing for instruction.

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JPRS: 55386
8 Nov 71

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subject on the organization and conduct of offensive and defensive combat

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- 2. Conditions and methods of attacking in a city 15
- 3. Place and role of motorized rifle battalion in an attack in a city. Front of attack, combat missions, means for reinforcing, and combat formations of subunits of the different branches in an attack in a city 27
- 4. Work of commander and staff of a battalion in organizing for an attack 31
- 6. Control of subunits in a battalion in an attack in a city 59

Defense

- 1. Views on the organization and conduct of an attack to seize a city held in the terms of capitalist countries 62
- 2. Conditions for reverting to a defense of a city 64
- 3. Role and place of motorized rifle battalion in organizing defensive combat in a city. Combat mission, combat formation, system of fire and employment work in battalion defensive area 68
- 4. Peculiarities in employing subunits of the different branches in organizing a defense 73
- 5. Peculiarities in the work of a commander and his staff in a motorized rifle battalion in organizing a defense of a city 76
- 6. Control of subunits in a battalion in the course of defensive combat 93

Work of a commander and his staff in a motorized rifle battalion in organizing an attack against a defending enemy in a city and control of subunits of the battalion in the course of battle when conventional weapons are used (tactical example of reverting to the attack from a defensive position) 99

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Introduction

The history of wars and especially World War II shows that combat action to capture or hold a city has been a frequent occurrence. This will be characteristic of any future war if the imperialists should unleash one.

Modern cities are administrative and political centers. They contain large masonry buildings and structures and numerous

USSR

UDC: 681.2.087.92

KONCHAKOVSKIY, Ye. R.

"A Controllable Source of AC and DC emf Based on a Hall Pickup"

Tr. Sev.-Zap. zaochn. politekhn. in-t (Works of the Northwest Polytechnical Correspondence Institute), 1970, No 9, pp 57-59 (from RZh-Avtomatika, Telemechanika i Vychislitel'naya Tekhnika, No 11, Nov 70, Abstract No 11A106)

Translation: The author describes the circuit of a device for noncontact regulation of AC and DC emf. The magnetic system of the controllable source of emf consists of two symmetrically arranged L-cores made of magnetically soft materials, between which a Hall pickup is mounted. When a permanent magnet is moved in the horizontal direction along a lead screw located at a fixed distance from the magnetic system, a difference emf appears across the pickup with a sign which depends on the direction in which the magnet is moving. High precision and stability of the Hall output emf is achieved by power supply from a stable parametric regulator. Temperature instability of the reference diodes and Hall pickup is eliminated by thermostatic control of the pickup and regulator. The effect of external magnetic fields is reduced by shielding. Two illustrations, bibliography of one title. N. S.

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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ODORIFEROUS SUBSTANCES OF HYDROGENATED FATS -U-

AUTHOR--(05)-LOPATIN, B.V., SHMIDT, A.A., ZATULOVSKAYA, K.F.,
KONCHALOVSKAYA, M.YE., GROMOVICH, YU.I.
COUNTRY OF INFO--USSR

SOURCE--MASLO-ZHIR. PROM. 1970, 36(2), 13-18

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--IR SPECTRUM, UV SPECTRUM, CARBONYL COMPOUND, HYDROGENATION,
VEGETABLE OIL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0537

STEP NO--UR/9085/70/036/002/0013/0018

CIRC ACCESSION NO--AP0119456

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119456

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPLEX MIXT. OF ODORIFEROUS SUBSTANCES OF HYDROGENATED FATS WAS SEPD. FROM FATS BY MOL. DISTN. IN LAB. EQUIPMENT AND ANALYZED BY SPECTROPHOTOMETRY WITHOUT SEPN. OF THE MIXTS. INTO FRACTIONS. THIS SIMPLIFIED METHOD GAVE SATISFACTORY RESULTS. PRODUCTION DEODORIZING OF HYDROGENATED SUNFLOWER OIL MADE BY A BATCH OR CONTINUOUS METHOD SHOWED THAT IN CONTINUOUS PROCESSING, UNSATD. CARBONYLS WERE REMOVED MORE EFFECTIVELY THAN IN BATCH PROCESSING. THE IR AND UV SPECTRA OF THE PRODUCTS INVESTIGATED SHOW THAT CONTINUOUS DEODORIZING REMOVES UNSATD. CARBONYL COMPS. MORE COMPLETELY. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR. .

UNCLASSIFIED

USSR

R

KONONALOVSKAYA, N. Professor and MUROV, N., Candidate of Medical Sciences

"The Dangers of Stress"

Moscow, Literaturnaya Gazeta, No 8, 18 Feb 70, p 10

Abstract: Recent medical examinations of 3300 scientists showed that the incidence of hypertension was significantly higher than in other occupational groups: 10.17% in doctors and candidates of sciences, 8.15% in junior scientists without an advanced degree, and 6.63% in engineers, as compared with only 4.43% in technicians and other workers in the same institutes. This state of affairs is attributed to stress resulting from a variety of factors, including improper utilization of personnel, whereby scientists are forced to spend time and energy on low-level work (e.g., a sociological study revealed that 62% of all scientists have no assistant or only a part-time assistant), overloading with tasks that could be performed by other types of personnel, frequent interruptions of work (unexpected calls, waiting to meet with the directors, numerous conferences, etc.) and lack of exercise. Hypertension was 1.8
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USSR

KONCHALOVSKAYA, N., et al., Moscow, Literaturnaya Gazeta, No 3,
18 Feb 70, p 10

times less common among scientists who exercised regularly than
among those who did not (7.7 and 13.9%, respectively, of 700
persons examined).

2/2

USSR

KONCHALOVSKAYA, N. M., POPOVA, T. B., and BYALKO, N. K.

"Toxic-Chemical Injury of the Liver"

V sb. Tekhn. Progress i Gigiyena Truda (Technical Progress and Labor Hygiene),
Moscow, 1973, pp 84-88 (from RZh-Biologicheskaya Khimiya, No 24, Dec 73,
Abstract No 24F 2156)

Translation: A short review devoted to the problems and methods of the functional differential diagnosis of the toxic liver injuries (a test with ¹³¹I tagged dye Bengal Rose, billirubinemia, activity of serum enzymes, protein metabolism, etc). It was noted that with toxic hepatitis, the elevation of the activity of aminotransferases was manifested oftener and much stronger than any changes of other enzymes (pseudoCE, aldolase, alkaline and acid phosphatase).

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ON THE CLASSIFICATION OF SILICOTUBERCULOSIS -U-

AUTHOR--(05)--MOLOKANOV, K.P., RASHEVSKAYA, A.M., KONCHALOVSKAYA, N.M.,
SENKEVICH, N.A., KALITEYEVSKAYA, T.N.
COUNTRY OF INFO--USSR

SOURCE--GIGIYENA TRUDA I PROFESSIONAL'NYE ZABOLEVANIYA, 1970, NR 4, PP
49-52
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUBERCULOSIS, SILICA, RADIOGRAPHY, NECROSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1736

STEP NO--UR/0391/70/000/004/0049/0052

CIRC ACCESSION NO--AP0054578

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0054578

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CLINICO ROENTGENOLOGICAL CLASSIFICATION OF SILICOTUBERCULOSIS WHICH FOR A NUMBER OF YEARS IS HAS BEEN USED AT THE CLINIC OF THE INSTITUTE OF INDUSTRIAL HYGIENE AND OCCUPATIONAL DISEASES OF THE AMS OF THE USSR, IS OFFERED FOR DISCUSSION. THE AUTHORS SUBDIVIDE SILICOTUBERCULOSIS INTO 2 DISTINCT GROUPS. THE FIRST INCLUDES SILICOTUBERCULOSIS WHERE THE FORM OF TUBERCULOSIS CAN BE CONDITIONALLY SPECIFIED AGAINST THE BACKGROUND OF SILICOSIS. TO THE 20 GROUP IS REFERRED THE PROCESS IN WHICH DEFINITION OF THE TUBERCULOSIS FORM AND, AT TIMES, THE STAGE OF SILICOSIS TOO APPEARS TO BE IMPOSSIBLE. THE FOLLOWING FORMS OF THE DISEASE ARE SET APART WITH REFERENCE TO THE 20 GROUP: SILICOTUBERCULOUS BRONCH ADENITIS, MICRO AND MACRONODULAR AND ALSO MASSIVE SILICOTUBERCULOSIS. MOREOVER, IT IS SUGGESTED THAT THE PRESENCE OF TUBERCULOUS INTOXICATION, CASEOUS DEGENERATION AND POSITIVE BECILLOSCOPY BE POINTED UP SEPARATELY, ALONG WITH THE ABOVE MENTIONED CONDITIONS.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ESSENTUKI HEALTH RESORT TREATMENT OF PATIENTS SUFFERING FROM TOXICO
CHEMICAL AFFECTICN OF THE LIVER -U-
AUTHOR--(05)--~~KENCHALCYSKAYA, N.M.~~, VISHNEVSKIY, A.S., KHODYKIN, A.V.,
POPOVA, T.B., VISHNEVSKAYA, YU.S.
COUNTRY OF INFO--USSR
SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 3, PP 65-69
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LIVER DISEASE, MINERAL, WATER, MUD, LIPID METABOLISM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0905 STEP NO--UR/0497/70/048/003/0065/0069
CIRC ACCESSION NO--AP0126564
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126564

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS INVESTIGATED THE EFFECTIVENESS OF HEALTH RESORT TREATMENT IN 64 PATIENTS SUFFERING FROM TOXIC CHEMICAL AFFECTION OF THE LIVER CAUSED BY ORGANIC COMPOUNDS. UNDER THE INFLUENCE OF A COMPLEX HEALTH RESORT TREATMENT THE PATIENTS SHOWED A FAVORABLE DYNAMICS OF SUBJECTIVE AND OBJECTIVE INDICES; SPECIAL MENTION SHOULD BE MADE OF THE FAVORABLE EFFECT OF A COMPLEX OF CARBONATE SULFUR BATHS AND FANGOTHERAPY ON THE PROTEIN FORMING, PIGMENTARY, ENZYMIC AND FATTY LIPID FUNCTION OF THE LIVER. FACILITY: PYATROSKOGO NAUCHNO-ISSLED. INSTITUTA KURORTOLOGII I FIZIOTERAPII, INSTITUTA GIGIYENY TRUDA I PROFZABOLEVANIY AMN SSSR, MOSKVA.

UNCLASSIFIED

USSR

UDC 621.314.14(088.8)

NAYMUSHIN, V.A., NIKOLAYEV, A.G., KNYSH, V.A., KONGHENKOV, P.YE.

"Device For Increase Of A-C Voltage Without A Transformer"

USSR Author's Certificate No 261472, filed 7 June 68, published 28 May 70 (from RZh--Elektronika i yeye primenseniye, No 12, December 1970, Abstract No 12B533P)

Translation: A source of a-c voltage is connected with a load across an inductive-capacitance converter. There is a rectifier bridge, the input diagonal of which is connected in parallel to one of two series-connected capacitors of the converter, and the output is connected between the collector and emitter of a transistor. Between the inductive element of the filter and the emitter of the transistor, a network [teepochka] is connected of a series-connected transistor and a variable resistor, the movable arm of which is connected across a stabilitron with the transistor base. After breakdown of the stabilitron, the transistor is opened and shunting of the capacitor connected with the bridge takes place. The oscillation frequency of the converter and its Q-factor are reduced, which is accompanied by a reduction of the voltage at the load. As a result, the average value of the voltage at the load is maintained constant. Regulation of the output voltage of the device is also possible. 1 ill. V.Sh.

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AA0046381 - P.Ye. KONCHENKOV UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

244484 INVERTER in half bridge arrangement has improved self excitation. As the d.c. supply is connected to the inverter the generator based on transistors (1,2) capacitors (6,7) and commutating transformer (10) becomes active. The separation of output transformer (5) and the commutating transformer improves the conditions of self excitation. Resistors (8,9) serve to correct the duration of output waveform half periods. Resistor (12) regulates the output frequency within certain limits.

12.3.66 as 1061146/24-7. P.E. KONCHENKOV & A.G. NIKOLAEV. A.F. MOZHAISK MILITARY ENGINEERING ACADEMY, Leningrad. (7.10.69) Bul 18/28.5.69. Class 21d.
Int.Cl. H 02m.

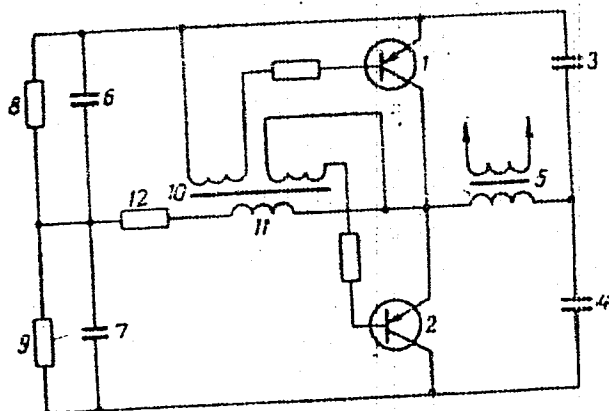
2/70

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19781546

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2/28

19781547

pc

AA0046381

AUTHORS: Konchenkov, P. Ye.; Nikolayev, A. G.

Leningradskaya Vovennaya Inzhener Naya Krasnoznamennaya Akademiya im.
A. F. Mozhayskogo

19781548

2/1/01

USSR

UDC 621.643.29+002.72

KONCHEV, Yu. N., State Scientific Research Institute of the Gas Industry, Saratov; GORSKIY, V. V., NESTEROV, A. M., Northwest Specialized Construction Trust, Kalinin

"Construction of a High Pressure Polyethylene Gas Line Under Winter Conditions"

Moscow, Stroitel'stvo truboprovodov, No. 5, May 72, pp 24-26

Abstract: Studies have shown that pipes of high-density polyethylene can be welded at temperatures below 0°C down to an ambient air temperature of -20°C without lowering the qualities of the welded joint. It is noted that the basic factors determining the properties of a welded seam, in addition to the welding technique, are the temperature and the rate of cooling of the molten material. At a high rate of cooling and at low temperatures of the structure the seam becomes microcrystalline, with the result that there is a certain drop in the density, the yield point and the strength of the material, for example, in many experiments the density of the material reduced from 0.956 to 0.951 g/cm³ and the yield point and the strength were reduced 8-10%. There is also a rise in the relative expansion of 65-80% on the average and in the shock viscosity of 20-25%.

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USSR

KONCHEV, Yu. N., et al, Stroitel'stvo truboprovodov, No. 5, May 72, pp 24-26

The properties of the material change with the course of time due to continuing crystallization processes in it. The structure transforms into an equilibrium state and after 5-9 days the high-density polyethylene reestablishes its initial properties. It is recommended that the location where the welding is done be protected from wind and precipitation and that the flashing off temperature of the material be increased by 5-10% to obtain a high-quality welded joint at temperatures below zero. Individual sections of the pipe line were subjected to strength and density tests and after completion of the construction the entire line was subjected to a pneumatic test at pressures of 7.5 and 6 kilogram-force/cm². The tests showed the high strength of the welded joints and no breakdowns in the joints or a disruption in their density was observed.

USSR

UDC 621.373:530.145.6:621.317.17

BUKOVSKIY, B. L., KONCHUKHIDZE, L. A., TOROPOV, A. K.

"An Installation for Measuring Laser Wavelengths in the Infrared Region"

Tr. Sib. NII metrol. (Works of the Siberian Scientific Research Institute of Metrology), 1971, vyp. 9, pp 36-41 (from RZh-Radiotekhnika, No 8, Aug 71, Abstract No 8D238)

Translation: An installation is described for measuring the wavelengths of gas lasers in the infrared region of the spectrum with a measurement precision of the order of 10^{-7} . The unit includes a two-beam Michelson interferometer and an electronic device designed for counting interference bands and determining the fractional part of the order of interference. The master emission source is a frequency stabilized gas laser which emits in the visible region of the spectrum (e. g. a helium-neon laser with $\lambda = 0.6328 \mu$) checked by comparison with a wavelength standard on Kr^{86} with an accuracy of $2 \cdot 10^{-8}$. To obtain a measurement precision of more than 10^{-7} , the path difference or duty-cycle frequency can be increased. The device can also be used to compare wavelengths in the visible region of the spectrum. A. K.

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USSR

UDC 621.81:539.4

KONDAKOV, G. F.

"The Influence of the Speed of Loading on the Value of the Residual Stress"

Omsk, Sb. nauch. rabot. fak. avtomat. yctanovok. Omsk. politekhn. in-t
(Collection of the Scientific Work of the Faculty of Automatic Devices of the
Omsk Polytechnic Institute), 1972, pp 40-44 (from Referativnyy Zhurnal --
Mekhanika, No 4, 1973, Abstract No 4V1354 by Ya. I. Burak)

Translation: Flat welded samples and samples of basic material with a crimp, imitating seam strengthening, underwent impact deformation with the goal of plastic deformation of the zone of a welded seam. The deformation was produced by cylindrical striker in the velocity interval from 6 to 31 m/sec. The influence of the speed of loading on the residual stress was evaluated. The residual stress was measured with a removable mechanical deformometer on a base of 100 mm. The experiments showed that at low speeds in the deformed zone the residual stresses are compressive, while away from this zone they are converted to tensile. On raising the speed a monotonic decrease in residual stress is observed both in the zone of deformation and outside it. For welded samples of alloy MA2-1 with impact rate measured in the range investigated the compressive stress decreased by 50%. For samples of the basic material alloy AM₁6M in the
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USSR

KONDAKOV, G. F., Sb. nauch. rabot. fak. avtomat. yctanovok. Omsk. politekhn. in-t, 1972, pp 40-44

deformation region, at impact speeds greater than 20 m/sec residual tensile stresses arose together with compressive stresses. It is assumed that the demonstrated effect is linked to significant local temperature changes at loading speeds which lead to thermoplastic deformation. On the basis of the results obtained, it is recommended that high-speed peening with impact speeds greater than 20 m/sec be used for lowering residual tension.

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USSR

UDC: 621.317.023

PETROV. V. P., GUTINA, E. M., KONDAKOV, Yu. V.

"Basic Trends in the Development of Techniques for Measuring Circuit Parameters on Superhigh Frequencies"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 52-57 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A368)

Translation: The advancing development of measurement technology demands a sharp increase in the informational capacity of instruments, as well as improvement in existing methods of measurement and development of new ones. It is noted that the technical revolution in radio electronics accompanied by microminiaturization, the use of hybrid and integrated circuitry, etc. has been reflected to a great degree on the level of measurement technology in the microwave band as well. Among the new and promising trends, works may be singled out on improvement of panoramic methods of determining the characteristics of microwave modules over a broad frequency range, and also works involved with the further development of single-frequency methods, as

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USSR

PETROV, V. P., et al., Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2, 1970, pp 52-57

well as works on the latest methods based on FM and pulse reflectometry in time and frequency regions. Some other areas of development are also examined. Bibliography of 17 titles. E. L.

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USSR

UDC: 621.317.73

PETROV, V. P., KONDAKOV, Yu. V.

"Methodological Problems in Automating the Measurement of Parameters in Circuits With Distributed Constants"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 161-166 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A365)

Translation: The authors point out the fundamental problems which have been defined up to the present time in the field of automating the measurement of parameters in circuits with distributed constants. Consideration is given to the general principles of constructing automatic measuring instruments, and to the possibilities of using them for measuring various systems of parameters, including structural systems. The concept of two different methods of automation is introduced: the dynamic method and the parametric method. Dynamic automation is possible in the frequency region, in the frequency-time region, and in the time region. Parametric automation is based on registration of a time-variable signal passing through the system to be investigated while some parameter of this system is varied. A table

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USSR

PETROV, V. P., KONDAKOV, Yu. V., Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1, Novosibirsk, 1970, pp 161-166

is given with the characteristics of the methods from the standpoint of their possibilities. This table illustrates the differences in effectiveness of the methods. Dynamic methods which have been most extensively used in practice are inadequate in the frequency region. Accelerated development of other types of instruments is needed. Seven tables. E. L.

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USSR

UDC: 681.325.63

KONDALEV, A. I., Doctor of Technical Sciences, BAGATSKIY, V. A., Engineer,
ROMANOV, V. A., Engineer, KUDLYAK, V. N., Engineer

"Particulars of Designing Information Form Converters Based on Integrated
Circuitry"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 5, Sep/Oct 73, pp
51-54

Abstract: The development of new kinds of computers has raised the prob-
lem of designing converters for changing the form of information. This
paper discusses some of the difficulties involved in making converters
with an element base which is compatible with state-of-the-art computers.
Particular importance attaches to the problem of adapting integrated cir-
cuit techniques to information form converters. Some examples are given
of developments in this area as regards analog components of information
form converters based on series-produced integrated circuits. On the basis
of these elements, the Institute of Cybernetics of the Ukrainian Academy of

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USSR

KONDALEV, A. I. et al., Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 5, Sep/Oct 73, pp 51-54

Sciences has developed a high-speed analog-digital converter with the following characteristics: dynamic range of input signals 0.1, 1, 10, and 100 V; principal conversion error 0.1%; additional temperature error 0.007%/°C; frequency of readings 1000 kHz; operating time to failure more than 2000 hours.

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USSR

UDC 681.325.65

KONDALEV, A. I., BESSARABOV, N. V.

"Optimum Structures of a Class of Analog-Digital Converters"

Taganrog, Region. nauch.-tekhn. seminar po stat. analizu, modelir. i avtomatiz. kontrolya ob"yektov s konstrukt. slozhn. strukturoy--sbornik (Regional Scientific and Technical Seminar on Statistical Analysis, Modeling and Automated Monitoring of Objects With a Structurally Complex Design--collection of works), vyp. 6, 1972, pp 43-49 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 72, abstract No 11B306)

Translation: The paper deals with problems of minimizing equipment by increasing the dimensionality of the memory in analog-digital functional converters with a large number of modules. A method is outlined for analyzing and synthesizing converters by means of subregions -- projections of weighting functions and their generating functions on the region of input variables. This method is applicable to any analog-digital and analog functional converters with assignment of the function at node points or in separate subregions of arbitrary dimensionality. Four illustrations, bibliography of three titles. L. P.

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USSR

UDC 681.3.001:51

KONDALEV, A. I., BESSARABOV, N. V.

"Optimizing the Parameters of Functional Converters With Smoothing by Auxiliary Signals"

V sb. Metody mat. i fiz. modelir. i optimiz. parametrov radioelektron. apparatury (Methods of Mathematical and Physical Modeling and Optimization of the Parameters of Radio Electronic Equipment--collection of works), No 1, Moscow, 1972, pp 116-119 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9, Sep 72, Abstract No 9B445)

Translation: The authors consider a functional converter of a single variable which reproduces the function F and which realizes additional smoothing by a kernel. It is noted that a very extensive class of kernels can be obtained merely by smoothing with auxiliary signals. Two illustrations, bibliography of two titles. V. D.

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USSR

UDC: 8.74

KONDALEV, A. I., NIKITIN, A. N.

"Comparative Evaluation of Algorithms for Functioning of a Voltage to Code Converter"

Kibern. Tekhn. [Cybernetic Equipment--Collection of Works], Kiev, 1971, pp 223-230 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V521, by V. Mikheyev)

Translation: A method is presented for selection of structural plans of VCC so that the functioning algorithms which they embody are best suited for performance of their assigned tasks in the sense of optimality of a certain effectiveness characteristic. The effectiveness characteristic of the functional algorithm of a VCC is the numerical estimate of the agreement of the results produced when the algorithm meets certain fixed requirements. The basic numerical characteristics of VCC algorithms used are: the set of operation, number of digits, accuracy, complexity and operating time. The effectiveness characteristics are defined as functionals fixed in the set of functional algorithms.

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USSR

UDC: 8.74

KONDARENKO, G. S.

"One of the Methods of Improving the Effectiveness of Deparallelizing Algorithms"

V sb. Tonkiye magnitn. plenki, vychisl. tekhn. i radiotekhn. T. 1 (Thin Magnetic Films, Computer Technology and Radio Engineering--collection of works. Vol 1), Krasnoyarsk, 1971, pp 177-180 (from RZh-Kibernetika, No 1, Jan 72, Abstract No IV1016)

Translation: A method of graph termination is given which improves the effectiveness of deparallelizing algorithms. The method is illustrated by an example. V. Mikheyev.

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F/2 -- 020 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CONTACTLESS PNEUMATIC MEASURING AND CONTROL INSTRUMENTS FOR
CIRCULAR GRINDERS -U-
AUTHOR--KONDASHEVSKI, V.V.
COUNTRY OF INFO--USSR
SOURCE--BERLIN, FEINGERAETETECHNIK, VOL 19, NO 4, APR 1970, PP 156-159
DATE PUBLISHED----APR70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--PNEUMATIC DEVICE, AUTOMATIC CONTROL SYSTEM, BALL BEARING,
BEARING MANUFACTURING EQUIPMENT, GRINDING MACHINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1614 STEP NO--GE/0018/70/019/004/0156/0159
CIRC ACCESSION NO--AP0123460
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123460

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONTACTLESS PNEUMATIC DEVICE FOR THE AUTOMATIC TESTING AND CONTROLLING THE SPHERICITY OF CYLINDERS FOR A ROLLING MILL, DEVELOPED JOINTLY AT OMSK POLYTECHNIC UNIVERSITY AND RESEARCH INSTITUTE FOR HEAVY MACHINE CONSTRUCTION, URAL MACHINE MANUFACTURING WORKS (ORIGINAL LANGUAGE VERSION NOT GIVEN) (DESCRIBED BY BIKIN, M. M., KONDASHEVSKI, V. V., ET AL IN A BOOK PUBLISHED UNDER THE EDITORSHIP OF KHIMITSH (INITIAL(S) NOT GIVEN) BY MASHINGSTROENIE; MOSCOW, 1968, PP 143-151), CAN BE USED IN MANY APPLICATIONS. SOME OF THESE, INVOLVE BALL BEARING MANUFACTURE AND USES TO WHICH THE HEALD GAGE MATIC MACHINE TOOLS CAN BE PUT. THE APPLICATION TO THE CONTROL OF BEARINGS WAS DESCRIBED AND OTHER POSSIBLE USES WERE DISCUSSED.
FACILITY: OMSK POLYTECHNIC UNIVERSITY.

UNCLASSIFIED

172 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--WF TEST FOR INVESTIGATING THE ABSORBTIVE EXCRETORY FUNCTION OF THE
LIVER -U-
AUTHOR--(02)-LOGINOV, A.S., KONDASHOVA, Z.D. K
CGUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 6, PP 101-103
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LIVER FUNCTION TEST, LIVER DISEASE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1919 STEP NO--UR/0504/70/042/006/0101/0103
CIRC ACCESSION NO--AP0129268
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129268

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE PRESENTS DATA OF INVESTIGATION OF THE ABSORBTIVE EXCRETORY FUNCTION OF THE LIVER USING A WF TEST IN 63 PATIENTS WITH DISEASES OF THE LIVER. SENSITIVITY OF THIS METHOD IN THE DIAGNOSIS OF EARLY FUNCTIONAL DISORDERS OF THE LIVER IS NOTED, IT HAS A DIFFERENTIAL DIAGNOSTIC SIGNIFICANCE IN THE ASSESSMENT OF THE SEVERITY OF FUNCTIONAL DISORDERS. THE MAXIMUM DEGREE OF THE CHANGES OF THE WF TESTS WAS OBSERVED IN PATIENTS WITH LIVER CIRRHOSIS, MIANLY BILLIARY, AND MODERATE, IN CHRONIC HEPATITIS. FACILITY: VSESOYUZNYY NII GASTRCENTEROLOGII NZ SSSR, MOSKVA.

UNCLASSIFIED

USSR

UDC 621.397.039.021.79.027(000.0)

KONDRAT'YEV, A. B., MASLENNIKOV, P. N., KONDRAT'YEV, V. P., ZEMSKOV, O. A.,
DANILLOV, O. M., and ZENNIN, V. V.

"Apparatus for the Electrochemical Treatment of Small Diameter Holes"

USSR Author's Certificate No 284879, Filed 25 Jun 68, Published 6 Mar 72 (from
Referativnyy Zhurnal -- Khimiya, No 21(II), 1972, Abstract No 211288P by
A. D. Davydov)

Translation: The new patented apparatus contains a tank for electrolyte, the
power source, and a cathode in the shape of a thin rod. It is suitable for the
treatment of small diameter holes in items made of low-magnetic alloys such as
VK6, VK8, and VK15. It differs from other similar apparatus by the presence of
a magnetic lens (in a shape of the shielded coil), with the cathode-instrument
placed within its field. The cathode is made of paramagnetic material, in order
to prevent the concentration of magnetic power lines in it.

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KONDALOV, N.M.

SPKS 59208
C-73

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XII-14 OPTIMIZATION OF THE PROCESS OF EPITAXIAL GROWTH IN PLON GAS TRANSPORT SYSTEMS
Article by A. V. Vanyukov, N. M. Kondalov, V. V. Tokmakov, M. S. Kozlov, Novosibirsk, III Simpozium po Tverdogornym Korpam i Sintezu Poluprovodnikov Kirzentshiv I. Pishch. Russkii, 12-17 June 1972, p. 180

In the example of obtaining epitaxial layers of cadmium selenide on insulating substrates of (0001) Al₂O₃ and (111) GaP in an open CdSe-H₂ system, the possibility was demonstrated of increasing the efficiency of the epitaxial growth takes place. The conclusion increase in the efficiency of the process requires an entire series of experiments which respect to

- 1) Investigation of the effect of the deposition rate of the material on the structure of the grown layer,
- 2) The study of the effect of the substrate temperature on the layer structure,
- 3) The study of the nature of the growth rate distribution of the layer along the crystallization zone for various temperature gradients in it.

On the basis of the first two studies, the region of epitaxial growth in the temperature and deposition rate coordinates is determined. For varying the temperature gradient in the crystallization zone and investigating the nature of the layer growth rate distribution, it is possible to find the temperature gradient for which the curve characterizing the growth rate distribution with respect to length of the crystallization zone is located for the most part in the region of epitaxial growth. This temperature gradient is optimal (or optimal) since for it the maximum length of the epitaxial growth zone on the given substrate is observed. In the investigated system CdSe-H₂, for example at opt = 5 deg/cm, and for fluorite, at opt = 15 deg/cm with a concentration head of 6.5·10⁻² mg/cm³ and a diameter of the reaction tube equal to 30 mm.

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XIV-17. EFFECT OF THE TECHNOLOGICAL PARAMETERS ON THE LITHIAL GROWTH OF LAYERS OF THE GaAs-GAP SLIP SYSTEM

Article by N. P. Kuznetsov, N. M. Kondalrov, V. S. Orlov, Moscow: Novosibirsk, 11, Sibirskiy Institut Fiziki i Khimii, Pribluzhennyye Voprasy Fizicheskoy Khimii i Pribluzhennyye Voprasy, 12-17 June 1972, p. 209.

The synthesis of the GaAs - x N solution was carried out in a flow reactor from the initial gas solution ($H_2 + H_{2s} + H_2P_2 + GaCl_3 + HCl$) on a substrate of gallium arsenide with the orientation (111) and (100).

Results are presented from an experimental study of the growth kinetics characteristics of the reactor, the concentration of the gas solutions fed into the synthesis zone, the velocity of the substrate gas flow above the substrate, and the relation velocity of the flow of the individual gas components forming the gas mixture in the deposition zone... the temperatures in the deposition zone of the layer and the source zone of the volatile gallium compounds.

Experimental data are presented on the etching kinetics of gallium arsenide using various gas mixtures occurring under specific conditions of the investigated system.

The optimal construction of the reactor and the technological parameters of the deposition process are proposed for a layer of solid solution of GaAs - x N (x = 0.3) with a growth rate on the order of 90 microns/hour and for arsenic and phosphorus consumptions per cycle less than 100 cm³/hour. The low consumption of hydrides in the given case is caused by the fact that the synthesis is carried out from highly diluted initial gas solutions of $H_{2s} + H_2, H_2P_2 + H_2$.

USSR

UDC 621.372.037.021.19.021 (000.0)

KONDAT'YEV, A. B., MASLENNIKOV, P. N., KONDRAT'YEV, V. P., ZEMSKOV, O. A.,
DANILOV, O. M., and ZENNIN, V. V.

"Apparatus for the Electrochemical Treatment of Small Diameter Holes"

USSR Author's Certificate No 284879, Filed 25 Jun 68, Published 6 Mar 72 (from
Referativnyy Zhurnal -- Khimiya, No 21(II), 1972, Abstract No 211288P by
A. D. Davydov)

Translation: The new patented apparatus contains a tank for electrolyte, the
power source, and a cathode in the shape of a thin rod. It is suitable for the
treatment of small diameter holes in items made of low-magnetic alloys such as
VK6, VK8, and VK15. It differs from other similar apparatus by the presence of
a magnetic lens (in a shape of the shielded coil), with the cathode-instrument
placed within its field. The cathode is made of paramagnetic material, in order
to prevent the concentration of magnetic power lines in it.

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UDC 619:616.981.42-07

KONDAUROV, B. I., and CHEKISHEV, V. M., Candidates of Veterinary Sciences,
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"Determination of the Time of Infection With Brucellosis"

Moscow, Veterinariya, No 11, 1971, pp 52-53

Abstract: The blood sera of heifers and sheep vaccinated, experimentally infected and naturally infected with brucellosis were investigated to determine the time of infection by finding antibodies with different physical and chemical properties. Macroglobulin-type antibodies with a 19S sedimentation coefficient disintegrate under the influence of reducing agents into 7S subunits with a loss of specific activity. Investigation of blood serum of vaccinated heifers revealed that predominantly 19S macroglobulin antibodies are synthesized first, then destroyed from the effect of heat and 2-mercaptoethanol. During this 2- to 3-week period, the highest RA and Coomb's test titers were registered in intact samples. Subsequently, as the level of macroglobulin antibodies decreased, the titers of the thermostable 7S antibodies increased. One month after vaccination and infection, the ratio of 19S and 7S antibodies was approximately equal. A higher level of 7S antibodies was registered in 2.5 months. Five months later only macroglobulin antibodies in lower titers
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1:25-1:60 were found. The 7S antibodies in lower titers were revealed for 13 months, the level of 19S antibodies being somewhat higher during that entire period. The higher level of 19S antibody content indicates recent infection (1-3 weeks), while finding 7S antibodies reveals an older infection (1-5 months). The low 19S and 7S antibody titers point to a much earlier infection process (6-16 months or more).

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4-4. MECHANISM OF THE PROCESS OF EPITAXIAL GROWTH OF ZINC SULFIDE AND
TELLURIDE ON THE GALLIUM ARSENIDE IN THE HYDROGEN FLOW

Article by N. F. Kovtonyuk, N. M. Kondalrov, V. S. Orlov, G. M. Savkov, Moscow:
Kovtonyuk, N. F., Kondalrov, N. M., Orlov, V. S., Savkov, G. M. *Zhurnal Prikladnoi Khimii*,
Kiev, 1972, 45:17, p. 377.

A study was made of the thermodynamic equilibrium in the ZnS-H₂ and the
ZnTe-H₂ systems. The partial pressures of the components of the gas phase were
calculated as temperature functions. The checking of the thermodynamic calcu-
lation by comparison of the calculated and experimental rates of removing the
zinc telluride and sulfide by a hydrogen flow from quartz-equilibrium sources
demonstrated that in the temperature range of 625-925 C the results of the
calculation agree well with the thermodynamic equilibrium in the investigated
systems.

The processes of transport and growth of zinc chalcogenides in ZnS-H₂
and ZnTe-H₂ systems were studied. A comparison of the experimental deposition
rate of zinc sulfide and telluride with the rate calculated by the quasiequilibrium
and diffusion models and the observed dependence of the growth rate on the
orientation of the substrate indicate that the growth process takes place with
respect to a mixed diffusion-kinetic mechanism. The authors of
reference [1, 2] arrive at an analogous result when investigating other open
gas transport systems.

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Series), No 9, 1969, 4, 49, 1969.
2. I. M. Kovalyuk, *Izv. AN SSSR, Khim. mater.* (News of the USSR Academy
of Sciences, Inorganic Materials), No 7, 925, 1971.

USSR

UDC 532.517.4

KONDICH, N. N.

"Generalization of Turbulent Transverse Flow Around Rods in a Reactor. Analysis and Applications"

Teplo- i Massoperenos. T. 2. Ch. 1 [Heat and Mass Transfer, Vol 2, Part 1 -- Collection of Works], Minsk, 1972, pp 407-413, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B826 by V. G. Krupenya).

Translation: The phenomenon of lateral transfer is studied in order to achieve a rational generalization of experimental results. A mode of stable single-phase flow without consideration of the input effect, influence of the shell, as well as transverse flow resulting from the pressure gradient is suggested. The diffusion factor for vortexing of the main flow without rods is introduced to the system being studied under condition of conservation of the same velocity, spacing and drop in turbulence, which corresponds to the extrapolation situation of "disappearing rods."

Analysis of the physical quantities participating in the transfer process (by methods of the theory of dimensionalities) is used to introduce a system of dimensionless criteria. The application of these criteria to adiabatic systems with quadratic grids shows that the value of the cross
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flow factor for the "zero" rod diameter is independent of Reynolds number. For finite rod diameters, the value of this coefficient is determined from the geometric parameters, influenced by only three dimensionless groups. A dependence is presented, allowing universal graphic construction of the value of increasing path length of fluid particles due to transverse diffusion with any fuel rod grating. 13 Biblio. Refs.

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KONDILENKO, I. I.

STUDY OF THE INTERMOLECULAR INTERACTION OF SMALL QUANTITIES OF FISH MUCUS AND DISTILLED WATER

Article by I. I. Kondilenko, V. Ye. Borozdina and V. D. Kholinskaya, Kiev: Kiev. Biokhimiya, Russian, No 5, 1971, Izd-vo "Naukova Dumka," pp 108-112

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At present there are several different models of water structure under normal conditions explaining the appearance of molecular interactions in the water, its infrared absorption spectra and the spectra of combined scattering of light [4, 5, 7].

All these models assert that there is a special kind of interaction among water molecules, hydrogen bonds. It has been established that with an increase in temperature and also with the dissolving of some substances in water (such as the halide-bearing compounds NaI, KCl, and others) there is a breaking of the hydrogen bonds. Such a break with an increase in temperature is accompanied by a decrease in viscosity and a change in the infrared absorption spectra and combination scattering.

The band in the combined scattering spectrum lying in the region 2700-3000 cm^{-1} and having a complex structure is particularly sensitive to a temperature increase. This band consists of a number of combined scattering lines caused by intramolecular oscillations.

The band components can be interpreted in the following way [7]. The band maximum, situated near 3210 cm^{-1} (Fig. 1), can be associated with the symmetric oscillation of water molecules bound to adjacent molecules by hydrogen bonds. With the breaking of these bonds one must expect a displacement of the maximum in the direction of the high frequencies, as is experimentally observed (Fig. 1) with a temperature increase. The maximum at 3450 cm^{-1} belongs to the asymmetric oscillation of