

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123047

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF ANALYZING FERROCHROMIUM FOR GASES V. S. SHITIKOV, AND N. A. GEDEREVICH, 1967) WERE NOT CONSISTENT BECAUSE OF INHOMOGENEITY OF SAMPLES. FERROCHROMIUM SAMPLES, (CONTG. 0.06PERCENT C, 0.6PERCENT SI, 70.9PERCENT CR), WERE SENT TO SEVEN DIFFERENT LABS. ABS. DEVIATIONS WERE 0.01PERCENT, 0.003PERCENT, AND 2.0 CM PRIME3-100 G FOR U, N, AND H, RESP. MEAN RELATIVE DEVIATIONS WERE 12.0, 21.1, AND 25.5PERCENT, RESP.; THE MAX. TO MIN. RESULT RATIOS WERE 1.5, 3.0, AND 7.5, RESP. FACILITY: ZAPOROZH. MASHINOSTROIT. INST., ZAPOROZHE, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED  
TITLE--GAS CONTENT OF FERROMANGANESE -U- PROCESSING DATE--11SEP70  
AUTHOR--SHITIKOV, V.S., GEDERVICH, N.A.  
COUNTRY OF INFO--USSR  
SOURCE--LITENOE PROIZVOD. 1970, (1), 41-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--FERROMANGANESE, IRON ALLOY, GAS CONTAINING METAL, METAL  
CONTAINING GAS, HIGH MANGANESE STEEL, AUSTENIC STEEL, CAST STEEL, ALLOY  
DESIGNATION/1UIG13L CAST MANGANESE STEEL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1988/1317 STEP NO--UR/0128/70/000/001/0041/0042  
CIRC ACCESSION NO--AP0106094  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106094

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ON THE BASIS OF OVER 500 ANAL. OF GASES IN FE,MN ALLOYS THE FOLLOWING INTERRELATIONS WERE DETD: WITH INCREASING SI CONCN. THE O CONCN. DECREASED. WITH INCREASING CONCN. OF C 1.0-7.0PERCENT THE O CONCN. DROPPED ON THE AV. FROM 0.026 TO 0.012PERCENT. DEOXIDN. WITH AL IS NOT ALWAYS COMPLETELY EFFECTIVE WITH FE,MN BECAUSE MN HAS A VERY HIGH AFFINITY FOR O. FOR THIS REASON IT IS RECOMMENDED TO EMPLOY STRONG DEOXIDIZING CONDITIONS WHEN MELTING HIGH MN STEELS (LIKE G13L) IN ORDER TO ELIMINATE THE EFFECT OF THE HIGH DEGREE OF OXIDN. OF THE ORIGINAL FE,MN.

UNCLASSIFIED

USSR

UDC 621.395:621.397

MENDELEVICH, A.A., SHITIKOV, YE.N.

"Energy Spectrum Of Videotelephone Signal"

Sb. nauchn. tr. TsNII Svyazi (Collection Of Scientific Works Of The Central Scientific-Research Institute Of Communication), 1970, Issue 2, pp 108-116 (from RZh--Elektrosvyaz', No 2, February 1971, Abstract No 2.64.138)

Translation: The paper evaluates the energy spectrum of the total picture signal of a videotelephone. It is shown that modulation of the picture signal of a videotelephone by quenching pulses of the horizontal sweep leads to a negligible change of the signal spectrum and the energy spectrum of the videotelephone signal is distributed more uniformly than the spectrum of a television signal. Summary.

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USSR

UDC: 621.397.6

SHITIKOV, Ye. N., Central Scientific Research Institute of Communications

"A Device for Transmitting Synchronous Videotelephone Signals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 14, 1970, Author's Certificate No 258478, filed 10 Dec 68, p 35

Abstract: This author's certificate introduces a device for transmitting synchronous videotelephone signals. The unit contains N transmitting and N reception videotelephone sets and synchronization units. As a distinguishing feature of the patent, the device is designed to reduce the frequency band of the communications channel to the spectral width of a single videotelephone signal. An electronic commutator is introduced in transmission for connecting the transmitting sets in alternation to the communications channel during scanning of a single frame, and a memory unit is introduced at the reception end in the form of a magnetic drum or disc which rotates at the frame scanning frequency and has N fixed recording heads and N fixed playback heads.

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Public Health, Hygiene and Sanitation

USSR

UDC 613.11(470)

SHITSKOVA, A. P. and BORISENKOVA, R. V., F. F. Erisman Moscow Institute of Hygiene

"Some Aspects of Research on Man's Adaptation to Natural and Specific Conditions in the RSFSR"

Moscow, Sanitariya i Gigiyena, No 10, 1973, pp 52-55

Abstract: On 28 July 1970, the Presidium of the USSR Academy of Sciences issued a decree aimed at intensifying research on man's adaptation to natural and special conditions in three directions: (a) study of adaptation to climatic and microclimatic conditions and problems of readaptation; (b) study of the possibility of adapting to physical environmental factors; (c) study of the effects of poisons entering the body and adaptive responses to them. The article outlines some of the research now under way in the various scientific organizations of the RSFSR on physiological reactions to extremes of heat and cold, noise, vibration, and various industrial poisons (e.g., ethyl alcohol, formaldehyde, cyclohexane, carbon tetrachloride, and benzene).

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USSR

UDC 613(470)(091)

SHITSKOVA, A. P., AKSYUK, A. F., BEYLKHS, G. A., GNOYEVAYA, V. L., GUSEV, M. I.,  
ZHILIN, P. N., NOZKIN, Ye. L., PAL'TSEV, Yu. P., and YASTREBOV, G. G.

"Coping With Current Health Problems in the RSFSR"

Moscow, Gigiyena i Sanitariya, No 12, 1972, pp 3-16

Abstract: Health problems were a major concern of the communist leaders after the revolution who swiftly organized agencies and services to deal with epidemics and famines. As these were brought under control, health officials became involved in city planning, design and building of houses, etc. The increasing tempo of industrialization led the authorities by the 1930's to study atmospheric pollution and the disposal of municipal and industrial sewage. Water pollution and suitable use of water resources were major interests by the 1940's. Following the war, industrial hygiene and occupational diseases along with food poisonings became the center of attention. In the 1960's research was focused on the problems created by the chemicalization of agriculture, the use of pesticides in particular. The effects of exposure to ultrasound, radiation, microwaves, and other technological advances are now under study. Much stress is placed on preventive medicine, with frequent mass check-ups of the population, particularly children and adolescents. The importance of

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USSR

SHITSKOVA, A. P., Gigiyena i Sanitariya, No 12, 1972, pp 8-16

comprehensive, accurate health statistics was recognized in the 1920's and they are constantly being refined and improved as an indispensable basis for planning and taking effective action.

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USSR

ZHUKOV, M. V. and SHITIKOVA, K. V., Institute of Atomic Energy imeni I. V. Kurchatov

"Appliation of the K-Harmonics Method to Computation of the Properties of Nuclei When Using the  $K = K_{\min} + 1$  Approximation"

Moscow, Yadernaya Fizika, Vol 14, No 2, Aug 71, pp 297-303

Abstract: The K-harmonics method of investigating the properties of multiple-body systems is often used to calculate the binding energies and wave functions of low-lying states or levels of atomic nuclei. A basic approximation of the K-harmonics method has been developed: the number K takes on a minimal value: that is,  $K = K_{\min}$ , which is allowed because of the symmetry of the wave function with respect to rearrangements of the nucleons. Unfortunately, this approximation cannot be applied to the case of anomalous parity in which the parity of the low-lying state is the opposite of the parity of the basic state. In such cases, the approximation  $K = K_{\min} + 1$  must be used. In the present article a procedure for calculating this approximation is developed. The matrix elements needed for the approximation are expressed in the form of the matrix elements of a translational-invariant shell model, and formulas for computing the latter elements are given. As an example, the procedure developed in the article is used to calculate the properties of an  $O^{16}$  nucleus.

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1/2 015  
UNCLASSIFIED  
TITLE--ONE MORE SOURCE OF THE ADDITIONAL STRUCTURE OF DIPOLE RESONANCES  
-U-  
PROCESSING DATE--30OCT70  
AUTHOR--(05)-ZHIVOPISTSEV, F.A., NAGAR, N.EL., SHITIKOVA, K.V., YUDIN,  
N.P., AKBARY, M.Y.  
COUNTRY OF INFO--USSR  
SOURCE--PHYS. LETTERS (NETHERLANDS), VOL. 31B, NO. 6, P. 347-9 (16 AMRCH  
1970)  
DATE PUBLISHED--16MAR70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--DIPOLE INTERACTION, NUCLEAR ENERGY LEVEL, NUCLEAR RESONANCE,  
INELASTIC SCATTERING, PARTICLE INTERACTION, ELECTRON HOLE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1992/0442  
STEP NO--NE/0000/70/031/006/0347/0349  
CIRC ACCESSION NO--AP0111635  
UNCLASSIFIED

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CIRC ACCESSION NO--AP0111635

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRUCTURE ARISING FROM THE  
COUPLING OF 3 PRIME NEGATIVE STATES WITH PARTICLE HOLE STATES IS  
CALCULATED. FACILITY: MOSCOW STATE UNIV., USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED  
TITLE--TRANSLATIONALLY INVARIANT SHELL MODEL -U- PROCESSING DATE--30OCT70  
AUTHOR-(04)-KURDYUMOV, I.V., SMIRNOV, YU.F., SHITIKOVA, K.V., ELSAMARAI,  
S.KH.  
COUNTRY OF INFO--USSR  
SOURCE--NUCL. PHYS. A 1970, 145(2), 593-612  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--NUCLEAR SHELL MODEL, HARMONIC OSCILLATION, WAVE FUNCTION,  
COORDINATE SYSTEM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1994/0011 STEP NO--NE/0000/70/145/002/0593/0612  
CIRC ACCESSION NO--AP0114411  
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0114411  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE TRANSLATIONALLY INVARIANT SHELL MODEL IN WHICH THE N OSCILLATE HARMONICALLY WITH RESPECT TO THE NUCLEAR CENTER OF MASS IS CONSIDERED. IN THIS MODEL THE WAVEFUNCTION OF THE NUCLEUS DEPENDS ON THE  $3(A-1)$  JACOBI COORDINATES. THUS, THE PROBLEM OF THE SPURIOUS STATES IS ABSENT IN THIS MODEL. THE TRANSFORMATION FROM ONE SET OF JACOBI COORDINATES INTO ANOTHER FOR THE OSCILLATOR WAVEFUNCTIONS IS DISCUSSED. THE METHOD FOR CALC. THE FRACTIONAL PARENTAGE COEFFS. IS SET OUT. FACILITY: INST. NUCL. PHYS., MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 018

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--INFLUENCE OF THE NUCLEAR STRUCTURE ON PHOTODISINTEGRATION OF  
LITHIUM 6 -U-  
AUTHOR--(04)-KURDYUMOV, I.V., SMIRNOV, YU.F., SHITIKOVA, K.V., ELSAMARAI,  
S.KH.  
COUNTRY OF INFO--USSR

SOURCE--PHYS. LETT. B 1970, 31(4), 163-6

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR STRUCTURE, PHOTONUCLEAR REACTION, LITHIUM ISOTOPE,  
EXCITED NUCLEUS, EXCITATION CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1982/0808

STEP NO--NE/0000/70/031/004/0163/0166

CIRC ACCESSION NO--AP0052244

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0052244

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ATTEMPT IS MADE TO DESCRIBE IN A SINGLE WAY THE TOTAL CURVE OF THE DIPOLE PHOTOEXCITATION OF THE PRIME6 LI NUCLEUS. THE PARTIAL CROSS SECTIONS OF PHOTOREACTION AND THE DECAY SPECTRA ARE COMPARED TO EXPTL. DATA. THE INFLUENCE OF THE EFFECTS OF N CLUSTERING IN THE GROUND STATE ON THE FORM OF PHOTOABSORPTION CROSS SECTION IS ESTD. FACILITY: INST. NUCL. PHYS., MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.371.029.5

SHITOV, A. A. and REMENETS, G. F.

"The Role of Higher TM and TE Normal Waves in the Propagation Processes of Ultra-Long Waves in Low Altitude Nighttime Waveguides"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972 pp 183-187 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A320)

Translation: The relative contributions of TM and TE normal waves (NW) in the field distribution of a vertical electric dipole in the low-altitude nighttime waveguide are investigated for the west-east direction at frequencies of 20 and 25 kHz. In the model under consideration, the contribution of TE<sub>2</sub> and TE<sub>3</sub> NW is significant up to 7000 km, but the contribution of TM<sub>2</sub> NW may be neglected beginning with 3000 km. Two illustrations, bibliography of 16.

A. L.

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USSR

UDC 591.32:531.5

SIMAKOV, Yu. G., AGAFONOV, V. A., VOLKOVA, O. V., ROMANOVA, Ye. A., and  
SHITOV, G. D., Chair of Histology and Embryology, Pediatric Faculty, Second  
 Moscow State Medical Institute imeni N. I. Pirogov, Moscow

"Pre-Implantation Development of Mouse Embryos Under Conditions of Changed  
 Gravitation"

Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, Vol 64, No 3, Mar 73,  
 pp 5-12

Abstract: Female mice were placed 11-13 hrs after mating into a centrifuge  
 in which an additional gravitational force of 1 G was exerted on them in the  
 dorso-ventral direction. Under the conditions of increased gravitation, a  
 delayed appearance of fetuses transferred from the oviducts into the horns  
 of the uterus was not observed. Morphological changes in the development of  
 the fetuses began to be apparent on the 4th day of pregnancy; they comprised  
 retarded development and disturbances in cleavage. These changes coincided  
 with the beginning of a drop in the content of bound lipids and a rise in  
 the content of PAS-positive substances in the endometrium. At the time of  
 implantation, after 4 days of the action of gravitational overload, the  
 majority of fetuses were unable to penetrate into the mucosa of the uterus,  
 because the blastocytes had not lost their zone pellucida or had undergone

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USSR

SIMAKOV, Yu. G., et al., Arkhiv Anatomii, Gistologii i Embriologii, Vol 64,  
No 3, Mar 73, pp 5-12

abnormal cleavage with the lysis of some blastomers. There were no signs of implantation on the 6th day. On the 12-13th day of the action of the additional gravitational force, the mice were no longer pregnant, because their uterus was thinned out as in mice in a state of diestrus. Under the effect of the gravitational overload, gestation was interrupted already in the pre-implantation stage.

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--REACTION OF G,S,DIALKYL CHLOROTHIOPHOSPHITES WITH ALPHA  
CHLORONITROSALKANES -U-  
AUTHOR-(03)-MARTYNOV, I.V., SHITOV, L.N., MORDVINTSEVA, YE.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 571-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--NITROSO COMPOUND, ALKANE, CHLORINATED ORGANIC COMPOUND, ALKYL  
PHOSPHITE, PHOSPHORUS SULFIDE, ORGANIC SULFUR COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/0933 STEP NO--UR/0079/70/040/003/0571/0573  
CIRC ACCESSION NO--AP0124593  
UNCLASSIFIED

2/2 013  
CIRC ACCESSION NO--AP0124593 UNCLASSIFIED PROCESSING DATE--13NOV70  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PASSING 3 G CCL SUB2 FNO AT MINUS  
30DEGREES INTO 4 G (ETO)(ETS)PCL IN CH SUB2 CL SUB2 RESULTED IN LOSS OF  
COLOR AND AFTER WARMING TO ROOM TEMP. GAVE 67PERCENT ETSP(O)CL(ON:CFCL),  
B SUB1 99-101DEGREES, D PRIME20 1.4790, N PRIME20 SUBD 1.4979; SIMILARLY  
WERE PREPD. 50-65PERCENT BUSP(O)CL(ON:CFCL), B SUB2 107-8DEGREES,  
1.3692, 1.4925; ETSP(O)CL(ON:CFCF SUB2 CL), B SUB0.1 57-9DEGREES,  
1.5131, 1.4582; MESP(O)CL(ON:CME SUB2), UNDISTILLABLE, 1.2950, 1.5079;  
ETSP(O)CL(ON:CME SUB2), UNDISTILLABLE, 1.2640, 1.5052; AND (ETS) SUB2  
P(O)ON:CFCL, B SUB2 108DEGREES, 1.3070, 1.5218.

UNCLASSIFIED

SHITOV

V.6.

Ref. Code: 7189003

Acc. Nr.: AN0104123

TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON LENIN AND STATE PRIZES, U.S.S.R.

NEWSPAPER-- IZVESTIYA, MAY 28, 1970, P 4, COLS 1-5

ABSTRACT-- NINETY ONE BASIC AND APPLIED RESEARCH WORKS HAVE BEEN NOMINATED FOR THE STATE PRIZES. TWO OF THESE, "THE MULTI-PURPOSE INDUSTRIAL HELICOPTER KA-26", BY N. I. KAMOV, V. B. ALPEROVICH, V. B. BARSHEVSKIY, A. A. DMITRIYEV, G. I. IOFFE, M. A. KUPFER, L. A. POTASHNIK, N. N. PRIOROV, A. G. SATAROV, M. VEDENEYEV, S. B. BREN, AND V. A. NAZAROV, AND "THE DEVELOPMENT OF TURBOFAN JET ENGINES NK-8 AND NK-8-4, AND THE DEVELOPMENT AND REDUCTION TO SERIAL PRODUCTION A SYSTEM OF TECHNOLOGICAL PROCESSES WHICH ASSURED WIDE USES FOR TITANIUM ALLOYS", BY N. D. KUZNETSOV, M. T. VASILISHIN, V. A. KURGANOV, P. M. MARKIN, V. D. RADCHENKO, P. A. SUKHOV, A. A. MUKHIN, V. G. SHITOV, G. I. MUSHENKO, L. A. SHKODO, AND G. P. DOLGOLENKO, HAVE BEEN SUBMITTED BY THE MINISTRY OF THE AVIATION INDUSTRY.

Reel/Frame

19870555

Acc. Nr.: AN0104123

"A SERIES OF INVESTIGATIONS INTO THE DYNAMICS OF A BODY WITH FLUID-FILLED CAVITIES", /65-68/, BY N. N. MOISEYEV, A. A. PETROV, V. V. RUMYANTSEV AND F. L. CHERNOUSKO AND "ULTRA HIGH PRECISION JIG BORING MILLS WITH 1,000 X 1,600 AND 1,400 X 2,240 MM PLATENS", BY A. I. KIRYANOV, V. G. ABRAMOVICH, I. V. GUTKIN, A. S. ALIMPLEV, G. B. PAUKOV, AND A. S. YEGUDKIN, HAVE BEEN SUBMITTED BY THE COMPUTATION CENTER OF THE ACADEMY OF SCIENCES AND THE MINISTRY OF THE MACHINE TOOL CONSTRUCTION AND TOOL INDUSTRY, RESPECTIVELY.

"THE RADICALLY IMPROVED MELTING TECHNOLOGY OF CRITICAL-PURPOSE HIGH-ALLOY STEELS AND ALLOYS OF IMPROVED QUALITY ACHIEVED BY THE INERT GAS TREATMENT OUTSIDE THE FURNACE", BY YU. V. GERASIMOV, O. M. CHEKHOMOV, N. V. SIDOROV, S. K. FILATOV, B. A. CHEREMNYKH, R. M. KHAYRUTDINOV, I. P. BARMOTIN, L. K. KOSYREV, K. P. BAKANOV, N. N. VLASOV, P. I. MELIKHOV, AND N. A. TULIN, HAS BEEN SUBMITTED BY THE ZLATOUST METALLURGICAL PLANT.

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Reel/Frama

19870556

K2

1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--SHORT PERIOD PULSATIONS OF THE PULSAR CP 0808 AND BASIC  
CHARACTERISTICS OF ITS RADIO EMISSION IN THE RANGE OF METER WAVES -U-  
AUTHOR-(02)-VITKEVICH, V.V., SHITOV, YU.P.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 191, NO 3, 1970 PP 553-556  
DATE PUBLISHED-----70  
SUBJECT AREAS--ATMOSPHERIC SCIENCES, NAVIGATION  
TOPIC TAGS--PULSAR, STAR, RADIO EMISSION, RADIO TELESCOPE, PULSATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1990/1234 STEP NO--UR/0020/70/191/003/0553/0556  
CIRC ACCESSION NO--AT0109321  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0109321

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. INVESTIGATIONS OF THE RADIO EMISSION OF THE PULSAR CP 0808 WERE MADE ON THE E-W CRUCIFORM RADIO TELESCOPE OF THE PHYSICS INSTITUTE AT PUSHCHINA IN THE RANGE 60-110 MC-SEC. IT WAS FOUND THAT THE IMPULSES OF THE PULSAR CP 0808 IN THE RANGE 110-60 MC-SEC CONSIST OF SEVERAL SUBIMPULSES (1, 2 OR 3) WITH AVERAGE SEPARATION OF 53.6 MSEC. THIS PULSAR IS CHARACTERIZED AS CLASS II (DRAKE CRAFT CLASSIFICATION) WITH A MEAN PERIOD  $P_{SUB2}$  EQUAL 0 PRIMES .053642 PLUS OR MINUS 0 PRIMES .000002. THIS PERIOD IS NOT A MULTIPLE OF THE CLASS I PERIOD ( $P_{SUB1}$  EQUAL 1.292241 EQUAL 24.09  $P_{SUB2}$ ) AND THEREFORE THE FOLLOWING PICTURE IS OBSERVED: IN A GROUP CONSISTING OF AN AVERAGE OF 11 IMPULSES THE SUBIMPULSES FOLLOW ONE ANOTHER WITH A MEAN PERIOD  $P$  EQUAL 1.2874 EQUAL 24  $P_{SUB2}$ ; THEN THE SUBIMPULSES OF THIS GROUP GRADUALLY DISAPPEAR AND SUBIMPULSES OF THE NEXT GROUP, DISPLACED BY 53.6 MSEC RELATIVE TO THE FIRST, FORM A NEW SEQUENCE OF IMPULSES; THEN THE PATTERN IS REPEATED. CP 0808 IS THE THIRD PULSAR IN WHICH CLASS II PULSATIONS HAVE BEEN DISCOVERED. USING A MODEL OF A PULSAR AS A PULSATING ROTATING COMPACT STAR, IT IS POSSIBLE TO DETERMINE THE WIDTH AND TO SOME EXTENT THE FORM OF THE RADIO EMISSION DIAGRAMS OF PULSAR SUBIMPULSES. THE MEAN FORM OF THE RADIO EMISSION DIAGRAM CAN BE OBTAINED BY CONSTRUCTING A HISTOGRAM OF THE DISTRIBUTION OF AMPLITUDES OF SUBIMPULSES AS A FUNCTION OF THEIR TEMPORAL POSITION. ANALYSIS OF RESULTS OBTAINED AT FREQUENCIES 62, 96 AND 110 MC-SEC SHOWS THAT THE MEAN FORM OF THE RADIO

UNCLASSIFIED



1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--SOLID SOLUTIONS OF STRONTIUM AND BARIUM ORTHOSILICATES AND  
ORTHOGERMANATES -U-  
AUTHOR-(02)-GREBENSHCHIKOV, R.G., SHITOVA, V.I. S  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(4), 773-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, CHEMISTRY  
TOPIC TAGS--SOLID SOLUTION, SILICATE, GERMANIUM COMPOUND, X RAY  
DIFFRACTION, STRONTIUM COMPOUND, BARIUM COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1496 STEP NO--UR/0363/70/006/004/0773/0775  
CIRC ACCESSION NO--AP0125124  
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125124

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHASE EQUIL. IN THE SYSTEMS SR  
SUB2 SIO SUB4 BA SUB2 SIO SUB4 AND SR SUB2 GEO SUB4-BA SUB2 GEO SUB4  
WERE STUDIED, IN WHICH A CONTINUOUS SERIES OF SOLID SOLNS. ARE OBSO.  
PRESENTED ARE GRAPHICAL DEPENDENCES OF THE CHANGE IN THE LIGHT  
REFRACTION OF THE BA SUB2-X SR SUBX-(SI SUB1-Y GE SUB6)D SUB4 SOLID  
SOLNS. AND THEIR X RAY DIFFRACTION CHARACTERISTICS. FACILITY:  
INST. KHIM. SILIKAT. IM. GREBENSHCHIKOVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--NEW GERMANATE 5BAO.3CAO.4GEO SUB2 AND ITS RELATION TO SILICATE AND  
FLUOROBERYLLATE ANALOGS -U-  
AUTHOR--(02)-GREBENSCHIKOV, R.G., SHITOVA, V.I. S  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 175-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--SILICATE, SOLID SOLUTION, FLUORINE COMPOUND, BERYLLIUM  
COMPOUND, GERMANIUM COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/0847 STEP NO--UR/0363/70/006/001/0175/0177  
CIRC ACCESSION NO--AP0118023  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118023

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE 5BAO.3CAO.4SIO  
SUB2-5BAO.3CAO.4GEO SUB2 SYSTEM PROVIDES ADDNL. INFORMATION AS TO THE  
CONDITIONS FOR THE FORMATION OF SOLID SOLNS. INVOLVING MULTICOMPONENT  
COMPOS. THE EXISTENCE IN THIS SYSTEM OF CONTINUOUS SERIES OF SOLID  
SOLNS. OF THE GLASERITE STRUCTURAL TYPE WAS ESTABLISHED FROM THE LINEAR  
CHANGE IN THE NS AS WELL AS FROM THE MONOTONIC NATURE OF THE CHANGE IN  
INTERPLANAR SPACINGS WITH COMPN. FACILITY: INST. KHIM.  
SILIKATOV IM. GREBENSHCHIKOVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

632.95

SHITS L. A., TEREKHOVA, A. I., and POZDNYSHV, G. P.

"Method of Producing Oil Concentrates of Invert Emulsions for Agricultural Purposes"

USSR Authors' Certificate No 318381, Cl. A 01 n17/10, filed 27 Apr 70, published 17 Dec 71 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N552P by T. A. Belyayeva)

Translation: To increase the emulsifiability of the concentrate and widen the area of optimum component ratios in the oil phase, as well as reduce the cost of the concentrate, use of a natural stabilizer for commercial oil emulsions is suggested. The stabilizer is the by-product of the crude-oil dehydration (deemulsification) process. Natural oil emulsifiers can be isolated from the slurry ("intermediate layer") that forms in petroleum collecting tanks or settling tanks after petroleum has been treated with demulsifier reagents. The "intermediate layer," rid of petroleum residues, is boiled; the precipitate is separated out; the layer is rinsed on a filter, first with boiling, then with cold water, is dried and used as an emulsifier of invert pesticidal emulsion. From the "intermediate layer" that originates as a result of treating crude oil from the Mukhanovo field with the deemulsifier

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USSR

SHITS, L. A., et al., USSR Authors' Certificate No 318381, Cl. A Cl n 17/10,  
filed 27 Apr 70, published 17 Dec 71

Dissolvan 4411 the product that settles in the precipitate is isolated; 100 grams of it are kept in contact for 30 minutes with 0.5-1 liter of boiling water, filtered, rinsed with 1-2 liters of cold water, and air-dried. A concentrate of the following composition is obtained (part by weight): butyl ester of 2,4-D (79-95%) 30-40, spindle oil 60-70, petroleum solvent 10-20, emulsifier 3-7. Water is poured into the concentrate, the concentrate is stirred, and invert emulsion is obtained.

2/2

- 51 -

USSR

UDC 614.7:615.285.7:632.95]:613.2

SHITSKOVA, A. P., YELIZAROVA, O. N., and RYAZANOVA, R. A., Moscow Scientific Research Institute of Hygiene imeni F. F. Erisman

"The Pesticide Cycle in the Environment and Problems of Food Hygiene"

Moscow, Gigiyena i Sanitariya, No 11, 1970, pp 7-10

Abstract: Practical experience with pesticides shows that soil suffers the severest contamination. Organochlorine compounds can be detected in soil long after their initial application, for example, heptachlor and hexachloran are detected after 9-11 years. Trace amounts were found in the lower soil horizons 9-18 months after their initial application, pointing to the possible migration of pesticides via rainwater from upper layers to deeper layers, and their possible entrainment in ground water which is a source of potable water supplies. Soil composition and structure are important in the accumulation of toxic chemicals in rhizomes. For example, the greatest amount of lindane is detected in carrots grown on sandy loam, and the least -- in carrots grown on chernozem soil, though five times more toxic chemicals were applied in the latter case. From our data, potatoes grown in different soils acquired disagreeable organoleptic properties when carbathion was applied in several cases and adversely affected experimental animals.

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USSR

SHITSKOVA, A. P., et al, Gigiyena i Sanitariya, No 11, 1970, pp 7-10

More toxic preparations are in use in treating forest tracts, meadows, and industrial crops, and the amounts applied are being increased. This leads to contamination of forest flora and fauna. To illustrate, after a forest was treated with lindane, the residual amount of the pesticide in grass and leaf samples was 2 mg/kg; in 30-60 days this decreased to 0.2 mg/kg.

2/2

- 77 -



UDC 541.132+66.061.5

USSR

LASKORIN, B. N., Corresponding Member of the USSR Academy of Sciences, and  
SHIVRIN, G. N.

"Nature of Ion-Exchange Extraction and Sorption Processes"

Moscow, Doklady Akademii Nauk SSR, Vol 196, No 4, 1971, pp 862-865

Abstract: This article contains an analytical and experimental investigation of the nature of ion-exchange extraction and sorption processes. The theoretical equation for calculating the exchange constant for an ion in the organic phase by other different ions is presented, and its applicability for calculating the exchange constant of various single-charge ions is considered. The revised equation is investigated in the example of exchange of single-charged anions by the base tetraoctyl ammonia in toluene. It is pointed out that comparison of the calculated and experimental exchange constants depends on the assumed magnitude of the degree of substitution of the water molecules in the first solvate shell by toluene molecules. It is considered that the exchange constant of single-charge ions during ion-exchange extraction by quaternary ammonia compounds does not in practice depend on the interaction of the anions with the organic cations but is determined by the physical properties of the

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USSR

LASKORIN, B. N., and SHIVRIN, G. N., Doklady Akademii Nauk SSR, Vol 196, No 4, 1971, pp 862-865

solvent and the distributed ion. The electrostatic nature of the ion-exchange processes of sorption by solid ion-exchange resins is indicated by the interrelation of the exchange constants of the ions during sorption by solid and liquid ion-exchange resins. The solid ion-exchange resin can be considered as an organic solvent characterized by defined physical properties, and the degree of dehydration of the ion in the ion-exchange phase is equivalent to the degree of substitution of water molecules in the first solvate layer by solvent molecules during extraction. It is also concluded that during ion-exchange extraction and sorption, the electrostatic interaction of the exchanged ions with the solvent must be considered to determine the selectivity of the exchange.

2/2

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1/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--ELECTRODIALYSIS OF INDUSTRIAL CYANIDE SOLUTIONS AND SLURRIES -U-

AUTHOR--(G3)-SHIVRIN, G.N., LASKORIN, B.N., SHIVRINA, E.M.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(1), 89-93

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ION EXCHANGE MEMBRANE, CYANIDE, AQUEOUS SOLUTION, GOLD,  
SILVER, COPPER, ZINC, IRON, ALUMINUM, CHEMICAL PRECIPITATION,  
ELECTRODIALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1989/0744

STEP NO--UR/0136/70/043/001/0089/0093

CIRC ACCESSION NO--AP0107286

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107286

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRODIALYSIS USING ION EXCHANGE MEMBRANES IS STUDIED AS A POSSIBLE PROCESS FOR THIS PURPOSE. PRACTICALLY ALL OF THE MATERIALS OF INTEREST (AU, AG, CU, ZN, FE) ARE PRESENT IN THE CYANIDE SOLNS. AND SLURRIES AS METAL CYANIDE COMPLEX ANIONS. THE FEATURES OF THE PROCESS ARE PRESENTED IN DETAIL. IF THE MEAN PRODUCT CONTAINS A CONSIDERABLE AMT. OF CU (5-10 G-DM PRIME3), THEN THE CU MUST BE REMOVED FROM SOLN. BY PPTN. WITH AL. THIS ALSO REMOVES ZN FROM THE SOLN. THE CHEM. PPTN. OF THE METALS FROM CYANIDE SOLNS. MUST BE DONE IN THE ABSENCE OF DISSOLVED O DUE TO THE POSSIBLE REVERSE REACTION OF METAL DISSOLN. THIS FACTOR IS ESP. IMPORTANT AT LOW CONCNS. OF THE DISSOLVED METAL. THE POSSIBLE WAYS OF DECREASING THE CONSUMPTION OF ELEC. ENERGY DURING ELECTRODIALYSIS ARE DISCUSSED.

UNCLASSIFIED

ALESHINA, L. A., VRUBLEVSKAYA, E. L., MOKROV, A. P., RYKOVA, L. L.,  
SHIVRIN, O. N., RABINOVICH, Ye. M., Tula

"Temperature Dependence of the Process of Formation of a Solid Solution Upon  
Sintering of Tungsten-Molybdenum Powder Pressings"

Moscow, Fizika i Khimiya Obrabotki Materialov [The Physics and Chemistry of  
Materials Processing], No 6, Nov-Dec 73, pp 111-117.

Abstract: This article is primarily dedicated to the study of the temperature dependence of sintering and its influence on the formation of a tungsten-molybdenum solid solution. The minimum holding time is established for various temperature modes of sintering. Free molybdenum disappears almost completely after minimum holding (15 minutes) at 1300-2200° C, but a significant quantity of almost pure tungsten is still present. As sintering time and temperature are increased, this W gradually goes over into the solid solution. The effective activation energy of the process is 64,000 cal/mol for the 1300-1600° interval and 76,000 cal/mol for the 1600-1800° interval. The solid solution did not achieve high homogeneity at any of the temperature-time modes used. This was particularly true of the alloy containing 50 wt.% Mo +

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USSR

Aleshina, L. A., Vrublevskaya, E. L., Mokrov, A. P., Rykova, L. L.,  
Shivrin, O. N., Rabinovich, Ye. M., Moscow, Fizika i Khimiya Obrabotki  
Materialov, No 6, Nov-Dec 73, pp 111-117. (2)

50 wt. % W. Increasing the temperature for this alloy leads to the formation of concentration heterogeneities. The kinetics of sintering in the surface layer differ from sintering in the volume of a specimen. The surface layers are richer in W.

Magnesium

USSR

UDC 669.72,669.73,539.26

GERMANOV, Ye. P., and SHIVRIN, O. N., Petrozavodsk State University imeni  
O. V. Kuusinen

"Dimensional Effect in Magnesium-Cadmium Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp  
892-894

Abstract: A study was made of the nature of distortion of the crystalline lattice of close-packed hexagonal solid solutions. Hardened and annealed Mg-Cd alloys (Cd from 5 to 20 at%) were investigated. All alloys in both the hardened and annealed states have a tendency toward short-range order, a fact which was substantiated by the shape of the curves of angular distribution of the diffusion phonon. In cadmium-base alloys the model of the elastic isotropic continuum in the first approximation is fully acceptable. The atoms of the diffusing component Mg change its state to a great extent as compared to the atoms of diffuser Cd.

1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--SHORT RANGE ORDER AND ORDERING ENERGY IN ALPHA SOLID SOLUTIONS OF A  
COPPER ALUMINUM SYSTEM -U-  
AUTHOR-(02)-KULMANEN, E.V., SHIVRIN, O.N.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH, UCHEB. ZAVED., FIZ. 1970, 13(3), 35-40  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--ORDERED ALLOY, STATISTICAL ANALYSIS, METAL QUENCHING, SOLID  
SOLUTION, METAL CRYSTAL STRUCTURE, COPPER ALLOY, ALUMINUM ALLOY, X RAY  
SCATTERING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3003/1494 STEP NO--UR/0139/70/013/003/0035/0040  
CIRC ACCESSION NO--AT0130423  
UNCLASSIFIED



2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0130423

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A THEORETICAL CALC. WAS MADE OF THE ORDERING ENERGY BASED ON THE STATISTICAL THEORY (J. COWLEY, 1950) OF CLOSE RANGE ORDER AND BY USING EXPTL. VALUES FOR THE ORDERING COEFFS. FOR TEMPERED ALPHA SOLID SOLNS. OF CU-AL ALLOYS. THE DEPENDENCE OF THE CLOSE RANGE ORDER ON THE HARDENING TEMP. WAS STUDIED BY THE DIFFUSION SCATTERING OF X RAYS FOR CU-AL ALLOYS CONTG. 11.9, 14.3, 15.9, AND 17.6 AT. PERCENT AL. THE THEORETICAL AND EXPTL. VALUES WERE COMPARED FOR THE CLOSE RANGE ORDERING COEFFS. FOR ALLOYS CONTG. LARGER THAN 15 AT. PERCENT AL, THE COEFF. DEPENDS MAINLY ON THE NATURE OF THE ORDERED STATE. FOR THESE ALLOYS ORDERING TAKES PLACE DURING QUENCHING. FACILITY: PETROZAVODSK, GOSUNIV., PETROZAVODSK, USSR.

UNCLASSIFIED

1/2 042

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--EFFECT OF GAMMA IRRADIATION ON THE PROCESS OF ESTABLISHING SHORT  
RANGE ORDER IN ALPHA CUAL -U-

AUTHOR--(02)--KULMANEN, E.V., SHIVRIN, O.N.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1) 154-7

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAMMA IRRADIATION, ORDERED ALLOY, ALUMINUM COPPER ALLOY, METAL  
DIFFUSION, CRYSTAL DEFECT, RADIATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1989/1338

STEP NO--UR/0185/70/015/001/0154/0157

CIRC ACCESSION NO--AP0107811

UNCLASSIFIED

2/2 042

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107811

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF GAMMA IRRADN. WAS DETD. ON SHORT RANGE ORDER IN ALPHA CUAL ALLOYS CONTG. 11.9, 14.3, AND 15.9 AT PERCENT AL. THE 10 PRIME6 MINUS 10 PRIME7 R IRRADN. DOES DID NOT AFFECT THE SHORT RANGE MAX. BUT AN INCREASE OF DIFFUSE BACKGROUND MODULATION WAS OBSERVED AT DOSES IS GREATER THAN 10 PRIME8 R. HIGH IRRADN. DOES INCREASE SHORT RANGE ORDER DUE TO AN INCREASE OF DIFFUSE MOBILITY OF ATOMS AND DUE TO INTRODUCTION OF NONEQUIL. CONCN. OF DEFECTS AS A RESULT OF IRRADN.

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--LOCAL DISTRIBUTION OF POINT DEFECTS IN GAMMA IRRADIATED METALS -U-  
AUTHOR--MALINEKO, I.A., SHIVRIN, O.N.  
COUNTRY OF INFO--USSR  
SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1), 150-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--GAMMA IRRADIATION, IMPURITY LEVEL, CRYSTAL DEFECT, CRYSTAL  
LATTICE PARAMETER, GAMMA SCATTERING, MOLYBDENUM, NICKEL, COPPER,  
DISTRIBUTION COEFFICIENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/1337 STEP NO--UP/0185/70/015/001/0150/0151  
CIRC ACCESSION NO--AP0107810  
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107810

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METALS CONTG. IMPURITIES (MO 99.98PERCENT, NI 99.9PERCENT, CU 99.98PERCENT) WERE SUBJECTED TO GAMMA IRRADN. OF MAX 10 PRIM7 R DOSE. THE OBSERVED INCREASE OF DIFFUSE SCATTERING INTENSITY IS DUE TO THE PRESENCE OF POINT DEFECTS, WHICH ARE FIXED IN CRYSTAL LATTICE BY IMPURITY ATOMS. THUS OBTAINED VALUES OF IMPURITY CONCNS. IN THE METALS AGREE WITH THE DATA OBTAINED BY CHANGES OF LATTICE PARAMETERS OF THESE METALS.

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--STEROLS IN FUNGI OF THE FAMILY BOLETACEAE -U-  
AUTHOR-(02)-CHEROTCHENKO, YU.P., SHIVRINA, A.N.  
COUNTRY OF INFO--USSR  
SOURCE--MIKOL. FITOPATOL. 1970, 4(2), 187-93  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--FUNGUS, PROCESSED PLANT PRODUCT, AQUEOUS SOLUTION, SOLVENT  
EXTRACTION, CHEMICAL PURIFICATION, STEROL, IR SPECTRUM, UV SPECTRUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605001/E12 STEP NO--UR/9063/70/004/002/0187/0193  
CIRC ACCESSION NO--AP0139385  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139385

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AIR DRIED, HOMOGENIZED FUNGI SUILLUS BOVINUS, S. VARIEGATUS, AND LECCINUM AURANTIACUM WERE EXT. WITH ETOH IN A WATER BATH. THE EXT. WAS SAPONIFIED WITH 5PERCENT ALC. KOH SOLN. FOR 4 HR. AFTER SHAKING SEVERAL TIMES WITH ET SUB2 O, THE ET SUB2 O EXT. WAS EVAPD. IN VACUO. THE RESIDUE WAS DISSOLVED IN C SUB6 H SUB6 AND TRANSFERRED TO A COLUMN FILLED WITH AL SUB2 O SUB3. THE STEROL COMPOS. WERE SEPD. BY ELUTION WITH PETROLEUM ETHER, C SUB6 H SUB6, ET SUB2 O, ET SUB2 O-MEOH (1:1), AND MECH. THE ELUATES SHOWING A LIEBERMANN BURCHARD COLOR REACTION FOR STEROLS WERE COMBINED. THE STEROLS WERE SEPD. BY USUAL METHODS AND RECRYSTD. FROM VARIOUS SOLVENTS. ALL 16 STEROLS SEPD. WERE DERIVS. OF ERGOSTEROL. BY UV AND IR SPECTRA AND M. P. DETN., ERGOSTEROL, 5,DIHYDROERGOSTEROL, AND 22,DIHYDROERGOSTEROL WERE IDENTIFIED.

FACILITY: BOT. INST. IM, KOMAROVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--ELECTRODIALYSIS OF INDUSTRIAL CYANIDE SOLUTIONS AND SLURRIES -U-  
AUTHOR--(G3)-SHIVRIN, G.N., LASKORIN, B.N., SHIVRINA, E.M.  
COUNTRY OF INFO--USSR  
SOURCE--TSVET. METAL. 1970, 43(1), 89-93  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ION EXCHANGE MEMBRANE, CYANIDE, AQUEOUS SOLUTION, GOLD,  
SILVER, COPPER, ZINC, IRON, ALUMINUM, CHEMICAL PRECIPITATION,  
ELECTRODIALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1989/0744 STEP NO--UR/0136/70/043/001/0089/0093  
CIRC ACCESSION NO--AP0107286  
UNCLASSIFIED



2/2 012

CIRC ACCESSION NO--AP0107286  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--02OCT70

MEMBRANES IS STUDIED AS A POSSIBLE PROCESS FOR THIS PURPOSE.  
PRACTICALLY ALL OF THE MATERIALS OF INTEREST (AU, AG, CU, ZN, FE) ARE  
PRESENT IN THE CYANIDE SOLNS. AND SLURRIES AS METAL CYANIDE COMPLEX  
ANIONS. THE FEATURES OF THE PROCESS ARE PRESENTED IN DETAIL. IF THE  
MEAN PRODUCT CONTAINS A CONSIDERABLE AMT. OF CU (5-10 G-DM PRIME3), THEN  
THE CU MUST BE REMOVED FROM SOLN. BY PPTN. WITH AL. THIS ALSO REMOVES  
ZN FROM THE SOLN. THE CHEM. PPIN. OF THE METALS FROM CYANIDE SOLNS.  
MUST BE DONE IN THE ABSENCE OF DISSOLVED O DUE TO THE POSSIBLE REVERSE  
REACTION OF METAL DISSOLN. THIS FACTOR IS ESP. IMPORTANT AT LOW CONCNS.  
OF THE DISSOLVED METAL. THE POSSIBLE WAYS OF DECREASING THE CONSUMPTION  
OF ELEC. ENERGY DURING ELECTRODIALYSIS ARE DISCUSSED.

UNCLASSIFIED

USSR

UDC 621.762.4.044.2

KARPINOS, D. M., BESPYATYY, V. A., SUKHIKH, L. L., SHIYANOVSKAYA, I. YE.,  
and BESPYATYY, A. A., Institute of Problems of Material Sciences, Academy  
of Sciences UkrSSR, Zaporozh'ye Aluminum Plant "Kommunar"

"Some Properties of Reinforced Cylindrical Shells"

Kiev, Poroshkovaya Metallurgiya, No 11(131), Nov 73, pp 31-35

Abstract: The described technological schema of the formation of cylindrical shells includes the explosive squeezing with subsequent heat treatment (heating up to 850° C and 50 min aging) of a composite consisting of a plastic matrix in the form of a foil on a nickel base and reinforcing tungsten fibers, 0.03 mm in diam., in the form of a grid. The results of an investigation of the high-temperature short-duration strength of the shells show that the short-duration strength of the composite at 800, 950, and 1100° C considerably exceeds the strength of the matrix. At 950° C the strengthening effect of the composite reaches 6, at 1100° C it reaches 12, with a simultaneous decrease in plasticity properties. After heat treatment the composites reveal thermal stresses which develop from the difference in the linear elongation and the elastic constants of the components of the composite.

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Miscellaneous

USSR

UDC 669.15'26-194:621.787.7

VINOKUR, B. B., GRAUN, M. P., KHIL'CHEVSKAYA, T. V., GELLER, A. L., KULICHENKO, V. P., and SHIYANOVSKIY, V. I., Institute of Casting Problems, Academy of Sciences, Ukrainian SSR

"Carbide Transformations in Complexly Alloyed Steel Containing One Percent Chromium"

Moscow, Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 104-108

Abstract: On the basis of studying carbide deposition by chemical and x-ray structural methods the authors concluded that a special chromium carbide  $Me_7C_3$  is formed. The methods used include microdiffraction of carbides extracted into a replica, distortions of the second and third type, modifications in the electrical resistance, coercive forces, microhardness, expanding the steel in the state of quenching and annealing at temperatures of 400-650° C. Under ordinary an-

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USSR

VINOKUR, B. B., et al., Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 104-108

nealing conditions this carbide is formed by a gradual restructuring of the iron carbide in proportion to how much it is doped with chromium, manganese, and tungsten. A coherent bond is retained between the lattices. Lengthy annealing at 650° C will result in a separation of trigonal chromium carbide.

Table 1 compares the chemical composition of the carbide phase as a function of annealing temperature; Table 2 identifies the carbide phases after different annealing conditions. Figure 1 shows the influence of annealing temperature on change in the fine crystal structure and certain physical characteristics of a steel. Figure 2 is an electron diffraction pattern of the carbides and an identification of the carbide phases following annealing at 650° C for a period of four hours.

The article contains 2 illustrations, 2 tables, and 9 bibliographic references.

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1/2 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--EFFECT OF THE PH OF THE MEDIUM AND OF THE NATURE OF ORGANIC  
SOLVENTS ON THE EXTRACTION OF THEOPHYLLINE FROM AQUEOUS SOLUTIONS -J-

AUTHOR--SHKADOVA, A.I.

COUNTRY OF INFO--USSR

SOURCE--FARMATSIYA (MOSCOW) 1970, 19(1), 56-7

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, ALKALOID, SOLVENT EXTRACTION,  
CHEMICAL ANALYSIS, COLORIMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1994/1207

STEP NO--UR/0466/70/019/001/0056/0057

CIRC ACCESSION NO--AP0115226

UNCLASSIFIED

2/2 012

CIRC ACCESSION NO--AP0115226  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT. THE TITLE EXTN. OF THEOPHYLLINE  
(I) WAS STUDIED. THE BEST RESULTS WERE OBTAINED BY EXTN. WITH CHCL  
SUB3, OR DICHLOROETHANE FROM SOLNS. OF PH 4-6, OR 5-7 RESP. I WAS  
DETD. COLORIMETRICALLY IN THE EXTS. AFTER EVAPN. ACCORDING H. WACHSMUTH  
AND L. VAN KOECKHOVEN (1963).  
LVOV, USSR.  
FACILITY: L'VOV. MED. INST.,

UNCLASSIFIED

USSR

UDC 533.6.01.35--3:541.124

SEMENIKHINA, O. N. and SHKADOVA, V. P.

"Three-Dimensional Flow Past a Blunt Body by a Reacting Mixture of Gases"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 2, 1973, pp 99-103

Abstract: Detailed results of a numerical solution of the problem of three-dimensional nonequilibrium flow past a segmented blunt body by a reacting mixture of gases are presented for angles of attack ranging from 0 to 25°. Consideration is given to the flow of a nonequilibrium gas past a body of revolution in the subsonic and transonic region. The three-dimensional nature of the flow is determined by the presence of an angle of attack between the direction of the stream velocity  $V_\infty$  and the axis of the body, the flow possessing a plane of symmetry. 5 figures. 6 references.

1/1

USSR

UDC 621.391.14

SHKALIKOV, V. N.

"The Bistable Properties of an Oscillation Circuit with a Nonlinear Varactor Capacitance in the Super-High Frequency Range"

Moscow, Radiotekhnika, Vol 26, No 3, 1971, pp 42-45

Abstract: The author studies the bistable properties of a circuit consisting of a nonlinear varactor capacitance and a short-circuited strip line. Relationships are derived which make it possible to select varactor type and calculate the resonator of a nonlinear oscillation circuit for the production in the circuit of bistable zones in a given frequency range. An oscillation circuit is designed and constructed and its bistable properties studied experimentally. The bistable zones produced are not less than 40 percent of the relative mean value. This indicates the possibility of constructing trigger units on these circuits in the superhigh frequency range. Original article: eight formulas, four figures, and six bibliographic entries.

1/1



USSR

UDC 531.768.089.62

KRASHENINNIKOVA, T. P., SHKALIKOV, V. S., and SHUR, V. L.

"Subsonic Vibration Installation With Magnetic Suspension of the Movable System"

Tr. Metrol. In-tov SSSR [Works of Metrological Institutes USSR], 1972, No 139 (199), pp 77-80 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.524)

Translation: A brief description is given of the type OIVU-2 vibration installation which makes it possible to decrease the lower limit of the frequency range to 0.01 Hz, to broaden the range of reproducible acceleration from  $10^{-7}$  to  $200 \text{ ms}^{-2}$ , and to increase by one order of magnitude the amplitude of dislocation. Two illustr., two biblio. refs.

1/1

USSR

UDC 539.4

LEBEDEV, A. A., SHKANOV, I. N., KOZHEVNIKOV, Yu. L., Kazan'

"Criteria for Endurance of Steels Under Variable Loads Under Conditions of Monaxial and Biaxial Static Extension"

Kiev, Problemy Prochnosti, No 12, Dec 1972, pp 15-19.

Abstract: A comparative analysis is presented of the existing criteria for fatigue strength under the combined influence of static and variable stresses and the criterion suggested for the case when the static stresses are a result of biaxial extension. The analysis is well argued with new, as well as known, experimental data and references to the literature.

USSR

BRAGIN, D. Ya., ~~SHKANOV, I. N.,~~ VASIL'YEV, G. V.

"Problem of Designing Bolt Joints Under Conditions of Stress Relaxation and Creep with Vibrations"

Tr. Kazan. Aviats. In-ta [Works of Kazan Aviation Institute], No 136, 1971, pp 34-41, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 V664 by V. S. Namestnikov).

Translation: Results are presented from experiments on relaxation of stresses in bolt joints of three heat-resistant steels with and without vibration and empirical formulas describing the results produced are presented.

1/1

USSR

LOGINOV, N. Z., SHKANOV, I. N.

"Improvement of Method of Testing with Separation of Process of Fatigue Rupture into the Stage of Microdamage and Final Rupture"

Tr. Kazan. Aviats. In-ta [Works of Kazan Aviation Institute], No 136, 1971, pp 25-33, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 V1272 by L. M. Shkol'nik).

Translation: A series-produced machine for fatigue testing with pure bending and rotation is redesigned so that the stretched fibers of the specimen are in the upper portion. A stroboscopic effect produced by illumination of the rotating specimen with a type ISSh-15 flash lamp is used to observe the moment of appearance of a macrocrack. When notched specimens of VT-8 titanium alloy were studied, data were produced showing that the viability factor of the specimen is 0.6 with respect to the mean probability of rupture at variable stress level  $28 \text{ kg/mm}^2$ .

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USSR

UDC 539.4

BRAGIN, D. YA., LOGINOV, N. Z., ~~SHKANOV, I. N.~~, Kazan' Aviation Institute,  
Kazan'

"Effect of Certain Engineering Factors on the Fatigue Strength of Titanium  
Alloys"

Kiev, Problemy prochnosti, No. 8, Aug 71, pp 78-82

Abstract: Fatigue tests were conducted on circular samples of titanium alloys widely used in the aviation industry. It is noted that despite the extensive use these alloys have several considerable shortcomings, including great inhomogeneity in the micro- and macrostructure, high sensitivity to stress concentration under variable loads, and considerable variability of mechanical properties as a result of working processes. The test samples had a diameter of 5 and 7.5 mm under pure bending with a frequency of rotation of 50 Hz. Tests based on statistical data showed several features in the behavior of titanium alloys under cold working which lead to a low value of the fatigue limit at the extreme boundary of the dispersion region. It is shown that the application of electrochemical working, electric polishing, and protective media in mechanical working lowers the cold working layer and stabilizes the

1/2

BRAGIN, D. YA., et al, Problemy prochnosti, No. 8, Aug 71, pp 78-82

mechanical properties of the alloys. It is concluded that the process of electrochemical working at the present level of its technological development should be applied as a final operation in fabricating titanium alloy parts.

2/2

68

USSR

UDC 669.245'26.018.44 :539.4

BRAGIN, D. YA., SHKANOV, I. N., GOL'DFARB, I. P., ZABIBULLINA, N. V.

"Effect of the Technological Conditions of High-Temperature Thermomechanical Treatment on the Static and Fatigue Strength of Heat-Resistant Alloy"

Tekhnol. i organiz. proiz-va. Nauchno-proizv. sb. (Technology and Organization of Production. Scientific Production Collection), 1970, No 6, pp 94-96 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I765)

Translation: The results of studying the fatigue strength of parts made of KhN70MVTYuB high-alloy heat-resistant Cr-Ni alloy subjected to high-temperature thermomechanical treatment are described. Recommendations are made with respect to thermal conditions and degree of plastic flow insuring that high strength qualities will be obtained. There are 3 illustrations, 2 tables, and a 3-entry bibliography. [Kazan' Aviation Institute].

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--FATIGUE TEST FOR BOILER STEEL IN AN ASYMMETRIC LOADING CYCLE -U-  
AUTHOR-(04)-KUDRYAVTSEV, I.V., BURMISTROVA, L.N., MAMINOV, A.S., SHKANOV,  
I.N.  
COUNTRY OF INFO--USSR  
SOURCE--PROBL. PROCH. 1970, (2), 77-80  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT  
TOPIC TAGS--CRACK PROPAGATION, FATIGUE STRENGTH, TEST METHOD, STEAM  
BOILER/(U)166NM STEEL, (U)22K STEEL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/1444 STEP NO--UR/3663/70/000/002/0077/0080  
CIRC ACCESSION NO--AP0135115  
UNCLASSIFIED



2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135115

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FATIGUE LIMIT OF STEELS 16GNM WITH A RISE IN THE MEAN LOADING CYCLE FALLS TO A GREATER EXTENT THAN THAT OF STEEL 22K. THE ESTABLISHED HIGH SENSITIVITY OF THE FORMER STEEL IS APPARENTLY DUE TO A GREATER TENDENCY TO CRACK FORMATION DURING OPERATION OF THE BOILERS. WITH A FALL IN THE YIELD POINT AND STRENGTH LIMIT IN CERTAIN STEEL HELTS OF THE TYPE 22K THERE IS A FALL IN THEIR FATIGUE STRENGTH OVER THE ENTIRE RANGE OF MEAN LOADING CYCLES. AN INCREASE IN THE STRENGTH AND YIELD LIMITS OF STEEL 16GNM DOES NOT INCREASE THE FATIGUE LIMIT DURING ASYM. LOADING IN BOILING WATER. THE USE IN FACTORY AND LAB. PRACTICE OF A DEVELOPED TEST METHOD FOR RAPIDLY CHECKING BOILER STEELS UNDER THESE CONDITIONS APPROXS. THE TEST TO REAL CONDITIONS. IT FACILITATES COMPARISON OF DIFFERENT BOILER STEELS FROM THEIR SENSITIVITY TO A SYM. LOADING. SUCH TESTS CAN BE RECOMMENDED FOR MAKING COMPONENTS FROM MATERIALS THAT ARE LESS SENSITIVE TO A SYM. LOADING IN BOILING WATER, WHICH IMPROVES BOILER OPERATION.  
FACILITY: KAZAN. AVIATS. INST., KAZAN, USSR.

UNCLASSIFIED

Acc. Nr:

00046653

Abstracting Service:

Ref. Code:

INTERNAT. AEROSPACE ABST 5-78 UR 3663

S

A70-25289 # Experimental verification of the fatigue strength criteria for biaxial tension (Eksperimental'naya proverka kriteriev ustalostnoi prochnosti pri dvukhsnom rastiashenii). I. N. Shkapor. (Kazanskii Aviatsionnyi Institut, Kazan, USSR). *Problemy Prochnosti*, vol. 2, Feb. 1970, p. 8-10, 9 refs. In Russian;

Calculation of the fatigue strength of materials undergoing alternating bending in the case of biaxial tension from the basic strength criteria for the complex stressed state. A graph-analytical method of calculating the fatigue strength for the case of biaxial tension from fatigue strength data for uniaxial tension is proposed, yielding results which are found to be in good agreement with experimental results.

A.B.K.

REEL/FRAME  
19781966

18

S  
USSR

UDC 621.787.6

SHKANOV, I. N., Candidate of Technical Sciences, IVANOV, V. S.

"Strengthening of Welds in Titanium Alloys"

Moscow, Mashinostroitel', No 1, Jan 70, p 20

Abstract: In order to obtain welds with a strength close to that of the base metal, 200 titanium alloy specimens were welded by four different welding methods, and then were fatigue tested. Specimens of the OT4 titanium alloy, 2 mm thick, were butt welded by an argon-shielded arc. To relieve welding stresses, the welded specimens were annealed at  $670 \pm 10^\circ\text{C}$  for 1.5 hour, and furnace-cooled to  $500^\circ\text{C}$  with subsequent cooling in an air atmosphere. To increase the strength of the welds, some of them were shot blasted. The prepared specimens were then fatigue tested. It was found that the fatigue strength of the base metal prior to strengthening was  $36 \text{ kgf/mm}^2$ . The highest fatigue strength of welds ( $25 \text{ kgf/mm}^2$ ) was obtained in specimens welded on both sides by automatic pulsed welding. Slightly lower fatigue strength ( $22 \text{ kgf/mm}^2$ ) was found in specimens welded on one side

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USSR

SHKANOV, I. N., et al., Mashinostroitel', No 1, Jan 70, p 20

with manual pulsed welding. The lowest fatigue strength (20 kgf/mm<sup>2</sup>) was in specimens welded by automatic and manual processes. After strengthening the welds with shot blasting, the highest fatigue strength was found in specimens welded on both sides by automatic pulsed welding. It was established, on the basis of tests, that shot blasting increased the fatigue strength of a weld, bringing it close to the strength of the base metal.

2/2

USSR

UDC 620.172.2

CHERNYAK, N. I., BASTUN, V. N., PELEPELIN, V. M., SHKARAPUTA, L. M., Kiev

"Deformation Curves of VT-6S and VT-14 Titanium Alloys at 20-400°C"

Kiev, Problemy Prochnosti, No 6, 1972, pp 65-67.

Abstract: Results are presented from tensile testing of heat-treated VT-6S and VT-14 titanium alloys at 20-400°C. Deformation curves are presented. Within limits of deformation of approximately 1%, the curves can be approximated by a second-order equation. Changes in the primary mechanical characteristics of the alloys with increasing temperature are shown. Tubular thin wall specimens were tested, with outer diameters of 29.5 mm, wall thickness 0.75 mm, and gage length 100 mm. For both alloys, the maximum divergence of calculated data from experimental data is not over 4%. The data produced indicate that the influence of elevated temperature on the characteristics tested is approximately the same for both materials.

1/1

SSR

UDC: 620.178.4/6

BASTUN, V. N., PELEPELIN, V. M., SUKARAPUTA, I. M., Institute of Mechanics,  
Academy of Sciences of the UkrSSR, Kiev

"Particulars of Deformation of Titanium Alloys in the Plane Stressed State"

Kiev, Prikladnaya Mekhanika, Vol 3, No 4, Apr 72, pp 93-99

Abstract: Taking VT-6S and VT-14 titanium alloys as an example, the authors investigate the applicability of certain hypotheses of plasticity theory to the evaluation of limiting states, and establish the region of principal stresses in the plane stressed state where the form of the stress deviator has a definite effect on the deformation curve. The plane stressed state was produced by loading thin-walled tubular specimens by axial force and internal pressure. It was found that a unique curve describes deformation in stress-strain coordinates for the given alloys. In the region of biaxial tension where the transverse (tangential) stress is greater than the longitudinal stress ( $\sigma_t > \sigma_l > 0$ ), a deviation from the unique curve is observed. This is attributed to anisotropy in the metal. The average normal stress has no appreciable effect on behavior of the deformation curve. The effect of the stress deviator in the region where  $\sigma_t > \sigma_l > 0$  is that greater hardening corresponds to the greater absolute

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USSR

BASTUN, V. N. et al., Prikladnaya Mekhanika, Vol 8, No 4, Apr 72, pp 93-99

value of the Lode strain parameter. The curves for limiting states of elasticity, yield and fracture in the region where  $\sigma_l > \sigma_t > 0$  and  $\sigma_t > 0 > \sigma_l$  are described by the Mises condition for an isotropic body. In the region of positive stresses with greater principal transverse stresses, there is a slight swing toward the St. Venant condition. Similitude of stress and strain deviators is observed at values of the Lode strain parameter of  $|\nu_\sigma| = 1$  or  $\nu_\sigma = 0$ . At intermediate values, deviations are observed which are more noticeable at negative values of  $\nu_\sigma$ . Five figures, bibliography of fourteen titles.

2/2

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USSR

UDC 613.644+613.65]-07:612.824

YEVDOKIMOVA, I. B., PETSKALEV, A. Z., and SHKARINOV, I. N., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"Investigation Into Cerebral Circulation Under Separate and Joint Effects of Intensive Noise and Physical Loads"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1973, pp 1-5

Abstract: Effects of noise, physical exertion, and their combination on cerebral circulation were studied rheoencephalographically on tire plant laborers experiencing either noise alone (85-105 db) or noise (82-101 db) and physical exertion, and experimentally on males in a soundproof room subjected to either 108 db for 1 hour, physical exertion, or both. In the industrial setting blood circulation changed in both groups following a hypertensive pattern to varying degrees. Arterial tonus changed in most cases. Heightened noise (108 db) produced a drop in venous tonus and encumbered venous backflow. In the experimental setting noise alone resulted in weaker vasoconstriction and reduced blood flow, work alone resulted in heightened vasoconstriction and increased flow, while the combination lowered inflow in the presence of heightened vasoconstriction, indicating



USSR

YEVDOKIMOVA, I. B., et al., Gigiyena Truda i Professional'nyye Zabolevaniya,  
No 7, 1973, pp 1-5

a sharp increase in vascular tonus. It is suggested that under pathological conditions stable noise (85 db) alone and variable noise plus work would produce a hypertensive pattern, while stable noise at higher intensities would cause an atonic pattern coupled with poor venous backflow. Although noise and work combined facilitate cerebral circulation the heightened vessel tonus may cause malnutrition in brain cells. Thus all conditions studied here should be considered potentially dangerous.

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USSR

UDC: 612.013.7.014.45

SHKARINOV, L. N., PAVLOVA, I. V., and KOMOVA, A. D., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"Comparison of the Effects of Different Kinds of Noise on Energy Metabolism in Experimental Animals"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 1, 1971, pp 5-9

Abstract: Rats were exposed to various frequencies and levels of noise (125 and 4,000 hz at 80 db and 125 and 4,000 hz at 97 db) 6 hours a day for 7 days. The content of pyruvic acid, creatine, creatinine, amino nitrogen, and inorganic acid in urine served as indexes of energy metabolism. Lactic acid and phosphorus fractions were determined in the brain, blood, and some internal organs after the experiments. Noise at 125 and 4,000 hz and 80 db reduced the content of pyruvic acid, creatine, etc. but had no effect on blood and brain lactic acid, an indication of intensification of the oxidative processes and glycolysis and resulting accumulation of macroergic phosphorus compounds. The action of octave bands with mean geometric frequencies of 125 and 4,000 hz at 97 db inhibited glycolysis in the CNS and disrupted the oxidative processes in the brain and viscera.

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USSR

UDC 612.824+612.85].014.45+613.644:[616.831-005+616.28

SHKARINOV, L. N., and YEVDOKIMOVA, I. B., Institute of Industrial Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"Relationship Between Noise-Induced Functional Changes in the Cerebral Blood Supply and Acoustic Sensitivity"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 11, Nov 70, pp 23-26

Abstract: An investigation was made of cerebral hemodynamics and acoustic sensitivity in 176 industrial workers exposed to steady (108 db) or pulsed (105 db) noise over a period of years. It was found that cerebral hemodynamics is highly sensitive to noise, with functional changes occurring sooner than in the acoustic analyzer. Hearing impairment was noted in a substantial number of persons in the group exposed to steady noise over a period of 6 years and in those exposed to pulsed noise for 11 years. Maximum hearing losses occurred in both groups after 20 to 25 years of work. Other things being equal, the extent and rate of functional shifts in the cerebral blood supply vary with the amount of acoustic energy entering the ear. Over a period of years, intense industrial noise, particularly steady

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USSR

SHKARINOV, L. N., and YEVDOKIMOVA, I. B., Gigiyena Truda i Professional'nyye Zabolevaniya, No 11, Nov 70, pp 23-26

noise at 108 db or more, will impair the normal circulation of blood in the brain and thereby create unfavorable conditions for the functioning of the acoustic analyser. The temporary shifts eventually become persistent and irreversible, resulting in loss of hearing.

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UDC: 621.317.332.1.088: 620.179.14

USSR

KIFER, I.I., SHKARLET, YU.M., FASTRITSKIY, V.S.,  
BONDARENKO, N.L. and KLYAGIN, YU.F.

"Estimate of Accuracy of Approximate Formulae for Calculation of  
Printed Transducer Impedance Due to Ferromagnetic Products"

Sb. Electromagnit. metody nerazrushayushch. kontrolya  
(Symposium on Electromagnetic Methods of Nondestructive Control)  
Minsk, Nauka i Tekhnika Publishing House, 1971, pp 91-101 (from  
Referativnyy Zhurnal-Metrologiya i Izmeritel'naya Tekhnika, No 8,  
1972, Abstract No 8.32.219)

Translation: Formulae derived by the authors are analyzed. It is  
shown that the results obtained from the approximate formulae are  
quite satisfactory in the range  $0.2 < \frac{|M|}{\beta_0} < 8.0$  with  $\alpha_3 > 0.35$ ,  
where  $|M|$  is the magnetic permeability of the product;  $\beta_0$  is the  
generalized parameter,  $\alpha$  is the relative distance between the

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UDC 534.2.001.5

USSR

CHERNYY, Z. D., and SHKARLET, YU. M.

"Theoretical-Experimental Investigation of the Electrodynamic Method of Producing Different Types of Ultrasound Waves in Metals"

Tr. NII Introskopii (Transactions of the Scientific Research Institute of Introscopy), Vyp 6, 1972, pp 3-12 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 9, 1972, Abstract No 9.32.502)

Translation: It is reported that the investigation of the possibility of producing different types of ultrasound waves and of the conditions for obtaining them in samples is one of the basic problems to be studied with the new electromagnetic-acoustic converter in ultrasound defectoscopy. The electrodynamic method of producing elastic waves in nonmagnetic electrical conducting isotropic samples by means of a constant or variable magnetic field is considered. In order to carry out appraisable calculations and to obtain optimal converter sensitivity, an expression was found for the electrodynamic amplitude, intensity and stress, consisting of a superposed roll in the constant magnetic field obtained by different orientations of the latter. (7 illustrations, 4 bibliographic entries)

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USSR

PETROV, A. V., PETROV, V. Ya., ~~SHKATOV, T. N.~~

"Determination of Probability of Losses of Information in a Buffer Memory Unit"

Moscow, Raboty po Tekhnicheskoy Kibernetike, No 4, 71, pp 24-29

Abstract: A method is suggested for determination of the probability of losses of information in buffer memory, allowing accurate estimation of losses in the system resulting from limited memory volume and limited waiting time. The formulas produced are rather simple and can be used for direct calculation if the probability characteristics of message arrival are known.

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1/2 019  
TITLE--FORMATION AND SEPARATION OF GRAPHITE INCLUSIONS (KISH) FROM MOLTEN  
CAST IRON -U-  
AUTHOR--SHKAYRO, V.G.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 134-5  
DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CAST IRON, CHEMICAL SEPARATION, NONMETALLIC INCLUSION, LIQUID  
METAL, ELECTRIC ARC FURNACE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1994/1786

STEP NO--UR/0148/70/013/002/0134/0135

GIRC ACCESSION NO--AT0115615

UNCLASSIFIED



UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 019  
CIRC ACCESSION NO--ATO115615  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDITIONS WERE STUDIED OF THE  
FORMATION, GROWTH AND FLUATATION OF KISH FROM LIQ. CAST IRON. THE CAST  
IRON WAS PREPD. BY MELTING ARMCO IRON IN AN ELEC. ARC FURNACE AND  
CARBURIZING IT WITH GRAPHITE RODS OR COKE. THE IRON THEN CONTAINED C  
3.92-4.97, MN 0.2-0.3, P 0.02-0.03, AND S 0.02 WT. PERCENT. THE HIGH C  
(C 4.97PERCENT) CAST IRON WAS HELD AT 1350-1400DEGREES FOR 5, 10, AND 15  
MIN. AT LOWER TEMP. AND LONGER HOLDING TIME, THE AMT. OF C AS KISH WAS  
LARGER THAN AT HIGHER TEMP. AND SHORTER HOLDING TIMES. AFTERWARDS THE  
ARMCO IRON WAS MELTED AT 1400DEGREES, CARBURIZED FOR 20 MIN, AND COOLED  
RAPIDLY. AT THESE CONDITIONS THE FORMATION OF KISH WAS VERY INTENSE.  
COARSE PARTICLES OF KISH WERE LOCATED IN THE UPPER PARTS OF THE CAST  
IRON INGOTS, WHILE FINER KISH WAS AT THE BOTTOM.  
OMSK. POLITEKH. INST., OMSK., USSR.

UNCLASSIFIED

UDC 538.56

USSR

KOVNER, M. S., PAVEL'YEV, D. G., SUKULEV, YE. I.

"Temperature Dependence of the Gunn Generation Parameters"

Gor'kiy, *Izvestiya vysshikh uchevnykh zavedeniy, Radiofizika*, Vol XIV, No 12, 1971, pp 1918-1922

**Abstract:** A study was made and results are presented for the temperature dependence of the frequency and power of a pulse generator in the Gunn generation mode. The diodes were made of monocrystalline gallium arsenide (GaAs) with a donor concentration  $n_d > 10^{15} \text{ cm}^{-3}$ . Under the experimental conditions, the high-frequency field of the resonator could not have a significant effect on the time and rate of onset of the strong field domain and, consequently, the generation frequency. Thus, the generation parameters were measured under conditions of maximum output power insuring tuning of the coaxial resonator in which the GaAs sample was placed. Graphs are presented of the dependence of the average generation power on the tuning of the resonator for 3 diodes. The mechanism of the effect is described. An increase in the average generator power with an increase in  $T_0$  in the investigated temperature range was observed experimentally, and curves are presented for this. With variation of  $T_0$ , the

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USSR

KOVNER, M. S., et al., Izvestiya vysshikh uchevnykh zavedeniy, Radiofizika, Vol XIV, No 12, 1971, pp 1919-1922

resonator was tuned to maximum power when the generation frequency is determined by the transit time of the diode. The increase in power is connected with an increase in the carrier concentration. If the tuning of the resonator is fixed, then with an increase in temperature as the drift frequency moves away from the natural frequency of the resonator, a decrease in power or even disruption of generation can occur.

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USSR

BUGAYEV, A. S.; GULYAYEV, Yu. V.; ~~SHKURDIN, G. N.~~ (Institute of Radio Engineering and Electronics, USSR Academy of Sciences, Moscow)

"A Theory of Acoustic-Electron Effects in Semiconductors with Hot Electrons"

Leningrad, Fizika Tverdogo Tela; September, 1970; pp 2654-9

ABSTRACT: A theory is developed for the interaction of classical ultrasound with electrons in semiconductors in which the relaxation time of the electron energy is comparable with the period of the sound wave (such a condition can take place in semiconductors with high mobility and small effective electron mass -- InSb, GaAs, etc. -- with low temperatures). It is shown that the well-known acoustic-electron effects here have a number of significant features. In particular, an electron temperature (or average electron energy) wave accompanying the sound wave and having the same frequency arises. This leads to a shift in the threshold of sound amplification; furthermore, the Weinreich relationship (Phys. Rev., 107, 317, 1957) does not hold. A constant positive correction to the electron temperature caused by the sound wave is found, and it is shown that under these conditions for a sound wave the electron gas can be heated as well as cooled.

1/1

SHKERIN, L. M.

*lunar geology*

PROBLEMS OF LUNAR GEOLOGY

Edited by A. V. Peyve

Translation of "Problemy Geologii Luni,"  
"Nauka" Press, Moscow, 1968

NASA TT F-669

(13)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

For sale by the National Technical Information Service, Springfield, Virginia 22161  
\$4.00

January 1973

ABSTRACT

TECHNIQUE OF DRAWING AND A METHOD FOR GEOLOGICAL-MORPHOLOGICAL MAPS OF THE MOON ON A SCALE OF 1:1,000,000

A. L. Subanov  
N. V. G. Ilyashov

ABSTRACT. A methodology is developed for interpreting telescopic and other pictures of the lunar surface for the purpose of indicating rock complexes and structures of various ages on geological-morphological maps of the Moon. The classification of lunar craters and other features according to age is discussed, as well as morphological signs.

THE THICKNESS OF THE PROCLINUM COMPLEX

A. L. Subanov  
N. V. G. Ilyashov

ABSTRACT. Lunar crater models of various authors are discussed. These include young, unfilled craters, and craters filled with material from various periods in the Moon's development. Curves between crater depths and crater diameter are developed.

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UDC: 621.315.592

USSR

PROKLOV, V. V., SHKERLIN, G. N., and GULYAYEV, Yu. V.

"Diffraction of Electromagnetic Waves by Sound in Conducting Crystals"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1915-1918

Abstract: Currently, investigations are being conducted of the propagation of ultrasonics in semiconductors where the ultrasonic wave may be accompanied by a wave of electrons of concentrated or medium energy. A light wave, therefore, should undergo additional dispersion by such electron waves, and an investigation of such dispersion should provide valuable information on the structure of the electron bunches and their dynamics. For this reason, the authors of the present paper consider the diffraction of light by ultrasonics in semiconductor specimens and theoretically investigate it. For simplicity, they examine the case of nondegenerative isotropic semiconductors for which there are two possibilities: a collision plasma of free charge carriers; a noncollision plasma. Since the contribution of the second case is greater, the authors' attention is focused on it.

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Acc. Nr: **AP0049055**

Ref. Code: **U9a357**

PRIMARY SOURCE: Vestnik Oftal'mologii, 1970, Nr / ,  
pp 88-89

**A RARE CASE OF A FOREIGN BODY IN THE ORBIT AND THE HIGHMORE SINUS**

**M. A. Pen'kov, YE. Z. Shapoval, A. M. Shkil'**

**Summary**

The authors report a case of combined lesion of the orbit and the Highmore sinus with the presence of a big foreign body (a metal nail with a head measuring 5x0.5 cm). Such wounds are of unirequent occurrence. The post-operative period proceeded smoothly ending with complete recovery of the patient.

REEL/FRA  
19800841



Acc. Nr.  
**AP0048031**

Abstracting Service: **5170**  
INTERNAT. AEROSPACE ABST.

Ref. Code:  
**TLR0041**

**A70-23119 #** Asymptotic splitting of a system of linear differential equations with slowly varying coefficients (Ob asimptoticheskom rasshcheplenii sistemy lineinykh differentsial'nykh uravnenii s medlenno meniaiushchimisia koeffitsientami). N. I. Shkil' (Kievskii Pedagogicheskii Institut, Kiev, Ukrainian SSR). *Ukrainskii Matematicheskii Zhurnal*, vol. 22, no. 1, 1970, p. 76-90. 7 refs. In Russian.

Description of a method of asymptotic splitting of a system of linear differential equations with slowly varying coefficients in cases where the characteristic equation has multiple roots. Two cases are considered—namely, a 'resonance' case, where the external frequency at certain values of the argument becomes equal to one of the multiple roots of the characteristic equation, and a 'nonresonance' case, where the external frequency is not equal to any of the roots of the characteristic equation.

A.B.K.

ALS

21

REEL/FRAME  
**19791713**

Television

UDC 551.594.221.001.4

USSR

GORIN, B.N., Candidate Of Technical Sciences; LEVITOV, V.I., Dr. Of Technical Sciences, Professor; ~~SHKILEV, A.V.~~, Engineer (all from Power Engineering Institute imeni G.M. Krzhizhanovskiy)

"Lightning Discharges At Ostankinskiy Television Tower"

Elektrichestvo, No 2, Feb 1972, pp 24-29

Abstract: The results are presented of observations conducted from June 1968 to October 1970 (i.e., during approximately 2.5 thunderstorm seasons) of strikes by lightning of the Ostankinskiy television tower (537 m) of the All-Union Radio-Television Transmitting Station in Moscow. Discharges at the television tower were recorded with the aid of discharge counters located directly on the television tower and of automatic photorecorders located close to the television tower and aimed at it. In 1970, combined with the photorecorders, oscillographic measurements were made with the aid of an automatic oscillographic device of the pulses of intensity of the magnetic field of the major stage of the lightning during discharges at the television tower. Some results are given of the oscillographic registration of the pulses of intensity. An account is given of the direction of subsequent comprehensive studies of lightning which will be conducted with the aid of photographic, electron-optical, oscillographic and other

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USSR

GORIN, B. N., et al., Elektrichestvo, No 2, Feb 1972, pp 24-29

apparatus with the use of the television tower as a fixed striking point. The authors note the great assistance rendered them by the administration and staff of the All-Union Radio-Television Transmitting Station. S.G. Obolduyev, M.A. Peskin, and G.S. Sakharova assisted in the observations. The authors are grateful to the workers of the Central High-Altitude Hydrometeorological Observatory for the presentation of data concerned with meteorological parameters. 6 fig. 5 ref. Received by editors, 21 Oct 71.

2/2

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Electricity & Magnetism

USSR

UDC 537.529

BAZIROV, M. A., KURBANOV, M. A., SHKILEV, A. V., and NURALIYEV, N. E.

"Investigation of an Electrical Discharge in the Air Between Electrodes Covered With Dielectrics"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLI, No 6, Jun 71, pp 1287-1291

Abstract: There is very little experimental data on the basic nature and parameters of the occurrence of an electrical discharge in the air between electrodes covered with dielectrics. The present article describes a method of investigating a discharge of this type. With the aid of an electric-optical converter and an oscillograph, optical and electrical images of the discharge were recorded simultaneously at various moments of sinusoidal voltage applied to the electrodes. It was established that the electrical discharge is discrete and is generated in the form of a series of spark channels. The geometric dimensions and number of the spark channels in a particular series depend on the type of dielectric used and on the width of the air space between the electrodes. It was also established that the voltage of the extinguishing of the discharge was not constant; it depends on the number of spark channels in each series of the discharge. Finally, the magnitude and polarity of the voltage had almost no effect on the optical image of the development of the discharge.

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USSR

ADAMENKO, A. I., ROLIK, A. I., PAVLOV, L. V., SHKIL'KO, G. YA., YAKOVLEV, A. I.

"Procedure for Manufacturing Stators for AC Electric Motors"

USSR Author's Certificate No 370697 (from Otkrytiya, Izobreteniya, Promyshlennyye obrazttsy, Tovarnyye znaki (Discoveries, Inventions, Industrial Models, Trademarks, No 11, 1973, page 171)

Translation: This method of manufacturing stators for AC electric motors by which the winding is placed in the gap of a nonmagnetic electrically conducting mount, the mount is inserted into a hollow in the stator setting it by the grooves opposite the stator grooves, an electric pulse is fed to the winding to create a magnetic field pulling the winding into the stator grooves is distinguished by the fact that in order to decrease the forces required to throw the winding from the mount into the stator and increase the productivity of labor, the grooves of the stator and the mount are made open and arranged in parallel for each pair of poles of the planes, and the conductors of the winding are shaped in advance into a coil group with calibrated grooved parts and with soft frontal parts.

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TITLE--INDOLE -U-

UNCLASSIFIED

PROCESSING DATE--13NOV70

AUTHOR--(03)-SUVOPOV, N.N., AVRAMENKO, V.G., SHKILKOVA, V.N.

COUNTRY OF INFO--USSR

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DATE PUBLISHED--04FEB70.

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL-PATENT, CHEMICAL SYNTHESIS, INDOLE, HYDRAZONE, OXIDE  
CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRADE--3004/1776

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

CIRC ACCESSION NO--AA0132042

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132042

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INDOLE WAS PREPD. BY PASSING THE  
PHENYLHYDRAZONE OF ACH THROUGH A LAYER OF HETEROGENEOUS CATALYST, SUCH  
AS METAL OXIDES, HEATED TO 350 PLUS OR MINUS 10DEGREES.

FACILITY: MENDELEEV, D. I., CHEMICAL TECHNOLOGICAL INSTITUTE, MOSCOW.

UNCLASSIFIED

USSR

UDC 547.821.792:759.32:542.97 (2)

YAKHONTOV, L. N., SUVOROV, N. N., KANTEROV, V. YA., PODKHALYUZINA, N. YA.,  
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Institute of Chemical Pharmaceutics imeni S. Ordzhonikidze, and the Moscow  
Institute of Chemical Engineering imeni D. I. Mendeleev

"The Heterogenous Fischer Catalytic Reaction. IV. Catalytic Synthesis of 7-  
Azaindole and 2-Methyl-7-azaindole in the Presence of  $\gamma$ - $Al_2O_3$ "

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 5, 1972, pp 656-658

Abstract: This is the first report of the synthesis of 7-azaindole (I) and 2-methyl-7-azaindole (II) by cyclization, respectively, of acetaldehyde pyridyl-2-hydrazone (III) or acetone pyridyl-2-hydrazone (IV) over  $\gamma$ - $Al_2O_3$  or  $\gamma$ - $Al_2O_3$  (2.6% F) at high temperatures. Both reactions, in addition to I or II, also yielded 2-azidopyridine and 3-methyl-s-triazole[3,4-a]-pyridine. Prior to the experiments the catalysts were activated by exposure to a flow of dry air for 6 hr. at 600°C for  $\gamma$ - $Al_2O_3$  and at 500°C for  $\gamma$ - $Al_2O_3$  (2.6% F); III and IV were purified by recrystallization from hexane. For the reaction, 7% benzene solutions of III or IV were passed over one or the other of the catalysts at temperatures ranging from 250° to 500°C. The products of the reaction were separated 1/2



USSR

YAKHONTOV, L. N., Khimiya Geterotsiklicheskikh Soyedineniy, No 5, 1972, pp 656-658

either by partition chromatography on an aluminum oxide column or, in the case of I, by gas-liquid chromatography. Evaluation of the results showed that the fluorinated catalyst functioned more efficiently; with this catalyst the maximum yield of I was obtained at 420°C and amounted to 15%, while that of II approached 50% at 315°C.

2/2

USSR

UDC: 547.752.07

S  
SUVOROV, N. N., AVRAMENKO, V. G., SHKILKOVA, V. N., Moscow Institute of Chemical Technology imeni D. I. Mendeleev Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"A Method of Producing Indole"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, 4 Feb 70, p 28, patent No 262904, filed 13 Jul 64

Translation: This Author's Certificate introduces: 1. A method of producing indole with a high degree of purity. Acetaldehyde vinylhydrazone is passed through a heated heterogeneous layer of metal oxides acting as a catalyst. 2. The method as given above differs in that the layer of heterogeneous catalyst is heated to a temperature of the order of  $350 \pm 10^{\circ}\text{C}$ .

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SHKINDEROV

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Soviet Inventions Illustrated, Section II Electrical, Derwent,

244504 AUTOMATIC INDUCTANCE METER FOR TESTING PIEZO-ELECTRIC RESONATORS contains master harmonic

generator (1), wide band amplifier (2) whose amplification factor is automatically changed by regulator (3), four-terminal resistance network (4) to which is connected piezoelectric resonator to be tested (not shown), automatic frequency trim circuit consisting of wide band amplifiers (5) and (6), sampling phase inverter (7) and phase detector (8). Pulse oscillator (9) changes the phase of sampling phase inverter (7). One input of ratiometer (10) is connected to input of resistance network (4) through amplitude detector (11) and amplifier of harmonic signal (12). The second input of ratiometer (10) is connected to input of amplifier (12) through converter circuit of connected in series peak detector (13), impulse amplifier (14) and frequency detector (15). The scale of ratiometer (10) is suitably graduated for direct reading the dynamic inductance of piezoelectric resonator.

12.6.68 as 1246963/26-9. V.F. IVANCHIN, et al (7.10.69)  
Bul 18/28.5.69. Class 2le. Int.Cl.G 01r.

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