YEROZOLIMSKIY, B. G., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoriticheskoy Fiziki, vol. 13, No. 7, 5 April 1971, pp 356-359

experimental work was done in the IRT-M reactor of the Institute of Atomic Energy imeni I. V. Kurchatov. The authors express their gratitude to P. Ye. Spivak for his interest; to A. I. Afonin, A. G. Roshchin, A. Yu. Kulikov, and S. I. Kuznetsov for setting up the equipment and making measurements; and to the personnel under the direction of V. P. Chernyshevich, in charge of the IRT-M reactor.

USSR

YEROZOLIMSKIY, B. G., BONDARENKO, L. N., MOSTOVOY, Yu. A., ORLNYAKOV, B. A.; ZAKHAROVA, V. P., and TITOV, V. A., Institute of Atomic Energy imeni I. V. Kurchatov

"Search for Three-Vector Correlation in the Decay of Polarized Neutrons"

Moscow, Yadernaya Fizika, Vol. 11, No. 5, May 70, pp 1049-1057

Abstract: An experiment conducted to measure the constant D of triple correlation between the vectors of the neutron spin σ and the electron and antineutrino momenta p_e and p_ν is described. The experiment was conducted on the IRT-M reactor of the Institute of Atomic Energy imeni I. V. Kurchatov. 23 series of measurements of duration 35-100 hours each were conducted and approximately 0.1·10^4 decay events were recorded. The average value of the coefficient D for all series was -0.01±0.01. The accuracy in obtaining the constant D made it possible to establish the difference from 180° of the phase difference between the axial-vector and the vector constants of weak interaction; this was found to be $\phi = 181.3° \pm 1.3°$.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--SEARCH FOR THREE VECTOR CORRELATION IN POLARIZED NEUTRON DECAY -U-

AUTHOR-(05)-YEROZOLIMSKIY, B.G., BONDARENKO, L.N., MOSTOVOY, YU.A., OBINYAKOV, B.A., ZAKHAROVA, V.P.

COUNTRY OF INFO--USSR

SOURCE--YADERN. FIZ.; 11: 1049-57, MAY 1970

DATE PUBLISHED----MAY70

1 0

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NEUTRON, RADIOACTIVE DECAY, ELECTRON, ANTIPARTICLE, WEAK NUCLEAR INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605020/D09 STEP NO--UR/0367/70/011/000/1049/1057

CIRC ACCESSION NO--AP0141021

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 014

CIRC ACCESSION NO--AP0141021

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VALUE OF THE CONSTANT D OF THE TRIPLE CORRELATION BETWEEN THE VECTORS OF THE NEUTRON SPIN SIGMA AND THE DIRECTIONS OF THE ELECTRON AND ANTINEUTRINO MOMENTA P SUBE AND P SUBPI IS FOUND TO BE MINUS 0.01 PLUS OR MINUS 0.01. THE CORRESPONDING PHASE SHIFT BETWEEN AXIAL VECTOR AND VECTOR CONSTANTS OF THE WEAK INTERACTION IS PHI EQUALS 181.3 PLUS OR MINUS 1.3DEGREES. FACILITY: INST. OF ATOMIC ENERGY, MOSCOW.

UNCLASSIFIED

UDC 612.822.3+612.825.54

USSR

SHUL'GINA, G. I., OBLACHEVA, N. K., and LYAPKUSOVA, A. V., Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR

"Interaction of Specific and Nonspecific Afferent Impulses in the Rabbit Visual Cortex"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 5, 1972, pp 1046-1054

Abstract: Spike activity and slow evoked potential of the surface and deep layers of the visual cortex were studied in alert, unrestrained rabbits following separate and combined action of light flashes and electrical stimulation of an extremity and in response to direct electrical stimulation of the lateral geniculate body (LGB) and reticular formation (RF). In some cases, nonspecific stimulation caused an unequal weakening of the slow waves in both the surface and deep layers of the cortex evoked by specific stimulation. Stimulation of the LGB elicited a deep negative wave that preceded a slow, deep positive oscillation which was not inverted on the surface of the cortex. An oscillation of similar parameters was also recorded in the deep cortical layers following stimulation of the RF. The combined action of the LGB and RF intensified this oscillation more than did stimulation of the LGB alone. The deep negative oscillation in response to stimulation of the RF reflected activation of 20%

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USSR

SHUL'GINA, G. I., et al., Zhurnal Vysshey Nervnoy Deyatel'nosti, No 5, 1972, pp 1,046-1,054

of the neurons recorded. It apparently helped to weaken the recurrent inhibition arising in the visual cortex in response to the specific stimulus.

2/2

1/2 028 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--SPECIFICITY OF THE COMPLEMENT FIXATION REACTION IN DIAGNOSIS OF Q FEVER -U-

AUTHOR-(05)-MARTYNYUK, YU.V., EMDINA, I.A., TITOV, M.B., OBLENSKAYA, G.I., KRUKIYER, M.D.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 4, PP 55-59

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--Q FEVER, BLOOD SERUM, ANTIBODY, ANIMAL DISEASE THERAPEUTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1539 STEP NO--UR/0016/70/000/004/0055/0059

CIRC ACCESSION NO--AP0109599

UNCLASSIFIED

2/2 028

CIRC ACCESSION NO--AP0109599

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE SPECIFICITY OF THE COMPLEMENT FIXATION REACTION IN EXAMINATION OF THE SERA OF 429 PATIENTS FROM THE THERAPEUTIC DEPARTMENTS, 1,730 PATIENTS WITH FEBRILE CONDITIONS OF VARIOUS ETIOLOGY, AS WELL AS OF 158 PATIENTS SUFFERING FROM CARCINOMA AND LYMPHOGRANULOMATOSIS. BESIDES, SERA PRESERVED FOR A PROLONGED PERIOD OF TIME WERE SUBJECTED TO EXAMINATION. THE RESULTS OBTAINED POINTED TO THE HIGH SPECIFICITY OF THE MENTIONED REACTION IN DIAGNOSIS OF Q FEVER. NOT IN A SINGLE CASE WAS THERE NOTED ANY ELEVATION OF SPECIFIC COMPLEMENT FIXATING ANTIBODIES IN DISEASE OF NON Q RICKETTSIAL ETIOLOGY. THE PERCENTAGE OF ANAMNESTIC REACTIONS REVEALED IN THE LATTER PATIENTS APPROACHED THAT OBTAINED IN STUDYING THE IMMUNOLOGICAL STRUCTURE OF THE HEALTHY POPULATION. NEVER WERE NONSPECIFIC RESULTS OBTAINED WHEN THE SERA WERE PROPERLY PRESERVED.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202230008-2"

USSR

UDC 614.449.542.615.285.42

USPENSKIY, I. V., and OBLESOVA, L. N., (BARMINA), Entomology Department, Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Ministry of Health USSR, Moscow

"The Need for the Prolonged Residual Effect of Acaricides in Ixodes Persulcatus Control"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 4, Jul/Aug 71, pp 465-469

Abstract: Since the sensitivity of engorged larvae and nymphs to acaricides is significantly lower than that of hungry ones, studies were conducted to determine effective control of engorged ticks. The duration of acaridical effectiveness on hungry ticks in natural conditions was also studied. Research was conducted in 1968-1969 a tickborne encephalitis focus in the southern part of Krasnoyarskiy Kray (Western Sayan). Results showed that in areas sprayed with DDT, 40-50% of hungry ticks were killed, and during the second season 25-40% were killed. During the research year not more than 25-30% of engorged larval were affected, while in the second season engorged larvae were not affected at all. Engorged nymphs were totally unaffected during both seasons. The acaricidal effect of DDT in the second season, after single

USSR

USPENSKIY, I. V., and OBLESOVA, L. N., Meditsinskaya Parazitologiya i Parasitarnyye Bolezni, Vol 40, No 4, Jul/Aug 71, pp 465-369

spraying is sufficient for elimination of the whole hungry and active population of ticks. Any preparation that loses its effect in the second season cannot be successful against I. persulcatus.

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UDC 911.3.616.9.576.895.42(42+57)

USSR

BABENKO, L. V., NAUMOV, R. L., USPENSKIY, I. V., MERINOV, V. A., RUBINA, M. A., VASIL'YEVA, I. S., IOFFE, I. D., OBLESOVA, L. N., and RAZUMOVA, I. V.

"A Biological Study of Ixodes Ticks -- Disease Vectors -- and a Scientific Study of Countermeasures in Natural Foci"

V sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta med. parazitol. i tropich. med., 1970 (Proceedings on the Conference Commemorating the 50th Anniversary of the Institute of Medical Parasitology and Tropical Medicine 1970 -- collection of works), Moscow, 1970, pp 52-53 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No. 1.36.67)

Translation: This study has four objectives: a) study of the ecology and population biology of the prevalent Ixodes and Dermacentor tick species; b) complex study of biological laws in natural foci of tickborne encephalitis and in one focus of Asian tickborne rickettsiosis (in Krasnoyarskiy Kray); c) study and practice of countermeasures against tickborne encephalitis for residents of large, newly-constructed housing developments in the hill rayons of Krasnoyarskiy Kray; and d) study of the effect of pesticides on ticks (I. persulcatus, for example). A proposal is advanced for research on the

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USSR

BABENKO, L. V., et al, V sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta med. parazitol. i tropich, med., 1970 (Proceedings on the Conference Commemorating the 50th Anniversary of the Institute of Medical Parasitology and Tropical Medicine 1970 -- collection of works), Moscow, 1970, pp 52-53 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.67)

characteristics of the population biology, morphology, and physiology of ticks within various geographic conditions.

UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 011

TITLE--AUTOMATIC DISCRETE CONTROL OF PULP DENSITY -U-

AUTHOR-(03)-MARYUTA, A.N., BUNKO, V.A., OBLETSOV, E.I.

COUNTRY OF INFO--USSR

SOURCE--GORN. ELEKTROMEKHAN. I AVTOMATIKA. RESP. MEZHVED. NAUCHNO-TEKHN. REFERENCE--MOSCOW, REFERATIVNYY ZHURNAL, METALLURGIYA, NO 4, 1970, DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--MINING ENGINEERING, ORE BENEFICIATION, FLUID DENSITY, CRUSHING PLANT, INDUSTRIAL AUTOMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/2062 STEP NO--UR/0000/70/000/014/0152/0156

CIRC ACCESSION NO--AR0127435

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 - 011
CIRC ACCESSION NO--AR0127435
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A CHAIR OF THE DNEPROPETROVSK MINING INSTITUTE, AN AUTOMATIC DISCRETE PYCNOMETER WAS DEVELOPED BASED ON THE PRINCIPLE OF AUTOMATIC SELECTION OF PULP FROM A FLOW WITH A MEASURING JAR. THE CHARACTERISTIC FEATURE OF THE UNIT WHICH WAS DEVELOPED IS THAT THE FLOW SAMPLING MOMENT AND PULP DENSITY MEASUREMENT ARE TIME SEPARATED. AN EXPERIMENTAL MODEL OF THE DEVICE WAS TESTED UNDER INDUSTRIAL CONDITIONS. PULP DENSITY WAS MEASURED IN ROD MILL DISHCARGE AT THE CONCENTRATING PLANT OF THE KAMYSHBURUNSKIY COMBINE. MEASUREMENT ERROR WAS PLUS OR MINUS 0.02 KG-L. BASED ON THE DISCRETE DENSIMETER, A SYSTEM WAS DEVELOPED FOR AUTOMATIC CONTROL OF PULP DENSITY IN ROD MILLS WHICH IS UNDERGOING EXPERIMENTAL INDUSTRIAL TESTS AT THE PLANT.

UNCLASSIFIED

UDC 669.14.018.58:621.78

USSR

LANKO, A. I., OBLEZIN, A. G., and SLYUSAREV, I. F., Novocherkassk Scientific Research Institute of Permanent Magnets

"Methods of Treating Ticonal Magnets"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 73, pp 71-72

Abstract: The magnetic properties of four-pole rotor magnets made of ticonal alloys were compared after heat treatment according to a mode currently used in industrial conditions and according to a newly proposed method. Chemical composition of the ticonal alloys was (in %):

	Co	Ni	Al	Fe	Ti	Cu	S	Si	Nb
Alloy 1	35	14.5	7.8	34.2	5.5	3	0.2	-	-
Alloy 2	35	12.4	6.2	35	5.5	3	0.2	0.2-0.3	1

The existing method of heat treating ticonal magnets consists basically in heating the magnets to 1250°C with isothermal soaking in a molten aluminum bath (815°C) with an applied magnetic field of 4500-5000 Oe. The new method consists in soaking at 1250°C for 10 minutes and then placing the magnets

USSR

LANKO, A. I., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 73, pp 71-72

in a brass vessel situated between the four poles of the magnetizing unit with an applied magnetic field of 300 Oe, which is turned on for 6-7 minutes. As the magnets cool, they heat up the brass vessel which slows down the cooling rate of the magnets. The new method of magnet heat treatment yields magnets with higher and more stable magnetic properties than the current method. No differences in magnet structure were detected for the two heat treatment modes used. Magnets made using alloy 2 had the better properties. 2 tables.

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OBLOMSKAYA, I

Econ

DISTRIBUTION IN SOCIALIST SOCIETY DESCRIBED

[Article by I. Oblomskaya: "Distribution in Socialist Society", Moscow, Politicheskoye Samoobrazovaniye, Russian, No 11, 1971, pp 83-88]

As the resolutions of the 24th Party Congress stipulate, the main task of this five-year plan is to ensure a considerable upswing in the material and cultural living standards of the people on the basis of high rates of development of socialist production and its increasing efficiency, scientific and technical progress and accelerated growth of labor productivity. The rational distribution of material and spiritual goods among the members of society plays a major role in the accomplishment of this central task. As an intermediary link between production and consumption, distribution has an impact not only on consumption but on production. The forms and methods of distribution assume at creating a direct link between the effectiveness of the labor and the amount of consumption of the worker determine the latter's interest in improving the production activities of his enterprise.

In the socialist society only participation in socially useful activities gives the right to acquisition of a certain share of the social product. This is the basic distinction between socialist and capitalist distribution. Under socialist conditions the purpose of distribution is to ensure the expanded reproduction of man himself as personality, the comprehensive development of his physical and spiritual capabilities of the members of society.

In this connection the attention is focused on the directions in the improvement of distribution relations which characterize the contemporary stage of our social development. They were the focal points of attention at the 24th CPSU Congress. Correspondingly, the following questions are considered:

1. Characteristic trends in the development of the socialist distribution system today.

2. Wage improvement methods

JPRS 55237 18 February 1972, Translations on USSR Economic Affairs No. 335

UDC 546.718

USSR

SPITSYN, V. I., KUZINA, A. F., TSARENKO, A. F., OBLOVA, A. A., BALAKHOVSKIY, O. A., KODOCHIGOV, P. N., GLAZUNOV, M. P., and KAYMIN, I. V.

"Synthesis of Metallic Technetium and its Physical Investigations"

Leningrad, Radiokhimiya, Vol 12, No 4, 1970, pp 617-621

Abstract: Highly pure metallic technetium in the form of a silver-gray poder or compact metal (regulus) was produced from tetraphenylarsonium pertechante $(C_6H_5)_4AsTcO_4$ by hydrogen reduction in an electric furnace. The resultant material showed superconductivity with a critical point of 8.2°K. A study of the technology for producing the metal from the initial pertechnate showed that technetium dioxide is produced after one hour in a hydrogen atomsphere at 260°C, and the metal is produced at a temperature of 1000°C. X-ray structural analysis revealed that metallic technetium has a hexagonal lattice with dense atomic packing of the magnesium type, the lattice parameters being $a = 2.74 \pm 0.005$ and $c = 4.41 \pm 0.005$; $c/a = 1.609$. The radiometric and neutron activation methods of analysis showed extremely minute quantities of trace impurities: Ru--10^{-8}, Rh--10^{-14}, Al--10^{-5}, Na--10^{-3} and As--10^{-3} gm per gm of technetium. Within the limits of sensitivity of the neutron activation method, no other impurities were detected.

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--CHROMATOGRAPHIC BEHAVIOR OF PERTECHNATE ION ON RESINS OF VARYING BASICITY -U-

AUTHOR-(04)-SPITSYN, V.I., OBLOVA, A.A., KUZINA, A.F., GALITSKAYA, N.B.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1151-4 (PHYS CHEM)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHROMATOGRAPHY, TECHNETIUM COMPOUND, ION EXCHANGE RESIN, CHEMICAL LABELLING, ISOTOPE, PYRIDINE, POLYMER, SOLUTION ALKALINITY, DISTRIBUTION COEFFICIENT/(U)AV17 ION EXCHANGE RESIN, (U)AV22 ION EXCHANGE RESIN, (U)AN40 ION EXCHANGE RESIN, (U)AN25 ION EXCHANGE RESIN, (U)AN23 ION EXCHANGE RESIN, (U)AN41 ION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1587 STEP NO--UR/0020/70/190/005/1151/1154

CIRC ACCESSION NO--AT0116995
UNCLASSIFIED

CIRC ACCESSION NO--AT0116995

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION COEFFS. (KAPPA) WERE DETD. OF TCO SUB4 PRIME NEGATIVE BETWEEN ION EXCHANGE RESINS AND WATER AT 1-8 OR 1-13 PH RANGES FOR WEAKLY BASIC OR STRONGLY BASIC RESINS, RESP. KAPPA WAS DETD. BY LABELLING THE SOLNS. WITH PRIME99 TC PRIMEM O SUB4 PRIME NEGATIVE AND BY MEASURING THE RADIOACTIVITY OF THE RESINS AND THE ELUANT, RESP. (RESIN, OPTIMUM PH, MAX. KAPPA TIMES 10 PRIME3 GIVEN): AV-17 (MODIFIED STYRENE DIVINYLBENZENE COPOLYMER), 8.0, 25; AV-22 (AS ABOVE), 8.0, 10; AN-40 (4,VINYLPYRIDINE,DIVINYLBENZENE COPOLYMER), 4.2, 3.5; AN-25 (2,METHYL,5,VINYLPYRIDINE,DIVINYLBENZENE COPOLYMER), 4.2, 2.1; AN-23 (2,VINYLPYRIDINE,VINYLBENZENE COPOLYMER), 3.1, 4.0, 0.9; AN-41 (5,ETHYL,2,VINYLPYRIDINE,VINYLBENZENE COPOLYMER), 3.1, 0.7. THE INCREASED SEPN. BETWEEN THE PYRIDINE N AND THE POLYMER CHAIN GAVE LOWER KAPPA VALUES.

Circuit Theory

USSR

UDC 621.396.677

LITVINENKO, L. N., OBLYVACH, S. A.

"Diffraction of an Electromagnetic Wave on an Array of Complex Shape"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 20, pp 71-79 (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 6B36)

Translation: A study was made of an indeally conducting periodic array of metal bars with an I-type transverse cross section. A method of solving the the problem of diffraction of a plane electromagnetic wave on such an array is presented. This method is a combination of the reexpansion and Rieman-Hilbert methods. The diffraction field is defined by the only nonzero latitudinal component of the magnetic field. Infinite systems of linear algebraic equations are obtained. The suitability of the solution of the equations for finding the amplitudes of the diffraction spectra for a sufficiently broad range of the ratio of the array period to the wavelength is demonstrated. There is 1 illustration and a 3-entry bibliography.

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UNCLASSIFIED PROCESSING DATE--02OCT70

1/2 011

TITLE--PROGRAMMED CONTROL OF ACETONE RECOVERY DURING ACETATE FIBER PRODUCTION -U-

AUTHOR-(02)-TUMANOV, G.S., OBNOVLENSKIY, P.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (1) 69-71

DATE PUBLISHED-------70

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

TOPIC TAGS--ACETONE, ACETATE, CELLULOSE RESIN, INDUSTRIAL WASTE, AUTOMATIC CHEMICAL PROCESS CONTROL, CHEMICAL PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0183/70/000/001/0069/0071

PROXY REEL/FRAME--1989/0483

CIRC ACCESSION NO--AP0107088

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 011

CIRC ACCESSION NO--AP0107088

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PROGRAMMED PNEUMATIC CAM GEAR HAS USED FOR THE CONTROLLED RECOVERY OF ME SUB2 CO FROM A GAS AIR MIXT. DURING THE PRODUCTION OF CELLULOSE ACETATE FIBERS. THE CAM GEAR CONTROLLED THE OPERATION OF 11 ADSORBERS (AND 1 EXTRA ADSORBER); IT CAN BE RE DILY PROGRAMMED FOR VARIOUS ADSORPTION CYCLES AND EFFECTIVELY CONTROL THEM.

UNCLASSIFIED

UNCLASSIFIED

1/2 017 PROCESSING DATE--18SEP70

TITLE--CRYSTAL CHEMICAL DATA ON CHELATE COMPOUNDS OF N SUBSTITUTED DERIVATIVES OF SALICYLALDIMINE. VII. CIS OCTAHEDRAL STRUCTURE OF

AUTHOR-(03)-SHKOLNIKOVA, L.M., OBODOVSKAYA, A.YE., SHUGAM, YE.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 54-61

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ZINC COMPLEX, CRYSTAL LATTICE, X RAY STUDY, LEAST SQUARE METHOD, METHOXY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0192/70/011/001/0054/0061

PROXY REEL/FRAME--1987/0409

CIRC ACCESSION NO--AP0104041

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104041

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZINC SALICYLAL,O,ANISIDINATE (BIS(O,(N,(O,METHOXYPHENYL)FORMIMIDOYL) PHENOLATO)ZINC) WAS INVESTIGATED BY X RAY ANAL. THE PARAMETERS OF THE MONOCLINIC LATTICE ARE: A EQUALS 12.727 PLUS OR MINUS 0.004, B EQUALS 12.552 PLUS OR MINUS 0.004, C EQUALS 14.806 PLUS OR MINUS 0.005 ANGSTROMS, BETA EQUALS 94.1 PLUS OR MINUS 0.2DEGREES, ZETA EQUALS 4, AND THE SPACE GROUP IS P2 SUB1-C. THE STRUCTURE IS DETD. BY THE HEAVY ATOM METHOD OF A 3 DIMENSIONAL DISTRIBUTION OF ELECTRON D. (6 CYCLES OF SUCCESSIVE APPROXNS.) AND IS MADE MORE PRECISE BY THE METHOD OF LEAST SQUARES IN ISOTROPIC APPROXN., R EQUALS 13.6PERCENT. ANOMALOUS PHYS. AND CHEM. PROPERTIES OF THE COMPLEX ARE CONNECTED WITH A SHARING IN THE COMPLEX FORMATION OF MEO ATOMS OF O AND WITH AN INCREASE OF DENTATICITY OF THE LIGAND BECAUSE OF THIS. AS A RESULT OF THE FORMATION OF AN ADDNL. INNER COMPLEX BOND OF ZN AND O (METHOXYL) THE TETRAHEDRAL COORDINATION OF THE ZN ATOM CHANGES TO CIS OCTAHEDRAL WITH PRESERVATION OF THE SYMMETRY OF THE POLYHEDRON C SUB2. EACH HALF OF THE MOL. REPRESENTS A SYSTEM OF 4 CONDENSED RINGS: 2 METAL RINGS AND 2 AROMATIC RINGS. THE INTERAT. DISTANCES IN THE COORDINATED OCTAHEDRON ARE ZN AND O EQUALS 1.965 AND 1.980, ZN AND O EQUALS 2.046 AND 2.049, ZN AND O (FROM MEO GROUP) EQUALS 2.405 AND 2.406 ANGSTROMS. THE BOND LENGTHS BETWEEN THE LIGHT ATOMS HAVE THE NORMAL VALUES AND CONFORM WELL TO ANALOGOUS DATA FOR RELATED COMPDS.

UNCLASSIFIED

USSR

KULIK, A. F., BARANOV, N. V., KHLOPOV, V. P., OBODZINSKIY, V. G.

"Automatic Device for Fatigue Testing of Aircraft Structures"

Otkrytiya Izobreteniya Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972, Patent No 359564.

Translation: 1. An automatic device for fatigue testing of aircraft structures, containing a programming device, controling the operation of the control device, actuating mechanisms loading the structure being tested, feedback sensors tracking the signal processing system, an emergency protection device, differing in that in order to increase the sensitivity and operational reliability, the control device consists of contact couples connected by a contact in the tracking system into circuits of switches which switch the actuating mechanism to loading or unloading.

2. A device according to Claim 1, differing in that in order to prevent nonfatigue rupture of the structure, the feedback sensors are installed at the test points and connected with the tracking system through the contacts of a switch.

3. A device according to Claim 1, differing in that in order to increase the upper limit of loading frequency of the structure, the hydraulic

USSR

KULIK, A. F., BARANOV, N. V., KHLOPOV, V. P., OBODZINSKIY, V. G., Otkrytiya Izobreteniya Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972, Patent No 359564.

system includes a hydraulic accumulator and electrically controlled hydraulic distributors, connecting the accumulator to the actuating cavity of the force exciter during the load cycle, switching the accumulators from the operating cavity of the force exciter to the pressure line during the unload cycle.

4. A device according to Claim 1, differing in that in order to increase the reliability of operation of the emergency protection system by checking its readiness, it includes emergency imitators consisting of buttons connected to the circuit controling the switches of the emergency protection system.

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UDC 616.981-718.078.737

USSR

MARTYNYUK, Yu. V., EMDINA, I. A., TITOV, M. B., OBOLENSKAYA, G. I., KRUKIYER, M. D., SUPRUNOVICH, M. S., ZABNINA, S. G., and MOSKAL'CHUK, Z. A., L'vov Institute of Epidemiology and Microbiology

"Specificity of the Complement Fixation Reaction in the Diagnosis of Q Fever"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp 55-59

Abstract: Study of the immunological structure of the L'vov population with respect to Q fever, using the complement fixation reaction with antigen from Rickettsia burneti, revealed the highest number of positives (18-21%) among livestock handlers, meat plant workers, etc., as compared with 10.7% in the population at large. Serological examination of 429 hospitalized patients with cardiovascular, respiratory, liver, kidney, gastrointestinal, endocrine diseases, etc., 1730 febrile patients suffering from typhoid, influenza, meningoencephalitis, and other infectious diseases, and 158 cancer patients showed that about 12% had complement-fixing antibodies to the specific Q-fever antigen, or about the same rate as in the general population. There was no increase in the level of specific complement-fixing antibodies in any of the patients with diseases

USSR

MARTYNYUK, Yu. V., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp 55-59

of non-Q-fever etiology. Even when the sera were stored for as long as 3-4 months (at 4°C) no nonspecific reactions were observed.

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4

UDC 614.449.57:615.285.7

USSR

LINEVA, V. A., PRSHIVORA, M., LEVIYEV, P. YA., OKULOV, V. P., GADZHIZALOV, D., SANINA, M. M., SAGATELOVA, I. S., and OBOLENSKAYA, L. F.

"Trails of the Czechoslovak Insecticide ES-50 Metathion in the USSR. I. ES-50 Metathion Used to Control the Housefly"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 2, 1970, pp 211-220

Abstract: ES-50 metathion, an organophosphorus compound derived from phenitrothion O, O-dimethyl (O-3-methyl-4-nitrophenyl) thiophosphate, was developed and tested in Czechoslovakia where it demonstrated a broad spectrum of action against flies, cockroaches, ticks, and crop pests. It has low toxicity for warm-blooded animals and no cumulative effect. Laboratory and field tests of the insecticide in five different climatic regions of the Soviet Union showed that it is highly effective in a dose of 2 g/m^2 of treated surface for 30-60 days. The temperature and humudity are the most important factors in the action of metathion. The higher the temperature and

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USSR

LINEVA, V. A., et al., Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 2, 1970, pp 211-220

humidity, the more toxic its effect. Increasing the humidity of the room or moistening the treated surfaces increases metathion's potency, especially on glass or wood. Among the negative features: (i) it has an unpleasant odor; (ii) it leaves marks on the treated surfaces; (iii) flies seem to develop resistance to it fairly quickly.

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UNCLASSIFIED PROCESSING DATE--09OCT70

1/2 013

TITLE--THE PROBLEMS OF MERCURY DEPOSITS GENESIS AND ORE MATERIAL SOURCES

-U-

AUTHOR-(02)-KUZNETSOV, V.A., OBOLENSKIY, A.A.

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 4, PP 44-56

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--MERCURY, METAL ORE, GEOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0210/70/000/004/0044/0056

PROXY REEL/FRAME--1993/0718

CIRC ACCESSION NO--AP0113582

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--09OCT70

2/2 013

CIRC ACCESSION NO--AP0113582

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PROVE THE PARAGENETIC RELATIONSHIP BETWEEN ORE MERCURY FORMATION DEPOSITS AND MANIFESTATIONS OF DEEP SEATED SUBCURSTAL MAGMATISM. THE GENETIC RELATION OF MERCURY MINERALIZATION WITH SUBCRUSTAL CHAMBERS OF SUBALKALINE BASALTOID MAGMAS IS ESTABLISHED. THE CONCLUSION IS GROUNDED ON DEEP SUBCRUSTAL SOURCE OF MERCURY IN ORES. THE MERCURY MOBILIZATION BY HYDROTHERMAL SOLUTIONS FROM THE EARTH'S CRUST IS OF LESS SIGNIFICANCE. FACILITY: IGIG SO AN SSSR, NOVOSIBIRSK.

89

UNCLASSIFIED

UDC 539.4:629.7.02

USSR

OBOLENSKIY, E.P. and SAKHAROV, B.I.

"Investigation of Airframe Panels Under Repetitive Static Loads"

Moscow, Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 173-193

Abstract: The low-cycle fatigue strength of the airframe structures is important because it determines their service life.

Several rivetes and pressed panels were tested on a fatigue testing machine at 1-4 cycles per minute.

The relation between the stress and the number of cycles causing failure is a straight line if log coordinates are used.

The test data are correlated by the mean square method. The scatter is defined as the deviation containing 70% of the test points.

Tables and graphs for several panels are presented.

It is recommended to test each panel design at four stress levels, with at least three panels tested at each stress level.

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USSR UDC: 539.4:629.7.02

OBOLENSKIY, Ye. P., SAKHAROV, B. I.

"Investigation of Panels of Aviation Structural Elements Under Repeated Static Loading"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 1971, vyp. 180, pp 173-193 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V839)

Translation: A procedure is presented for mathematical processing of the results of tests of panels for repeated static loading using the methods of probability theory, mathematical statistics, correlation and regression analysis. The results of tests of various types of panels are statistically processed by the proposed method to reveal the effect which technological and structural factors have on the fatigue strength of glider panels. Correlation equations of durability are calculated for these panels with corresponding statistical characteristics. A comparative analysis is given of the fatigue strength of some panels. Bibliography of 19 titles. Authors' abstract.

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1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--SEPARATION OF A CONCENTRATE OF ORGANOSULFUR COMPOUNDS BY AN ADSORPTION METHOD -U-

AUTHOR-(04)-OBOLENTSEV, R.D., LVAPINA, N.K., GALEYEVA, G.V., GAZEYEVA, V.N.

COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(1), 110-15

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--DISTILLATION, ORGANOSULFUR COMPOUND, KERSOSENE, CHEMICAL SEPARATION, POLYETHYLENE, ORGANOSILICON COMPOUND, PETROLEUM FRACTION, SULFIDE, THIOPHENE, HYDROCARBON, CHROMATOGRAPHIC SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0564 STEP NO--UR/0204/70/010/001/0110/0115

CIRC ACCESSION NO--AP0119482

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119482

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMBINATION OF RECTIFICATION AND ADSORPTION CHROMATOG. WAS USED FOR SEPN. OF CONCS. CONTG. ORG. S COMPDS. THESE CONCS. WERE OBTAINED BY EXTN. OF THE KEROSINE FRACTION (150-250DEGREES) OF ARLAN NAPHTHA WITH H SUB2 SO SUB4. THE RECTIFICATION WAS CARRIED OUT UNDER REDUCED PRESSURE IN STAINLESS STEEL AND GLASS APP. A COLUMN OF 290 TIMES 8.8 CM SIZE WITH 34 THEORETICAL PLATES AND 4 TIMES 5 MM LEVIN FILLING WAS USED. A 30 1. CONTAINER WAS HEATED WITH POLY(PHENYLMETHYLSILOXANE) LIQ. NO. 4 TO 200DEGREES. THE RECTIFICATION RATE WAS 200-50 ML-HR AND THE REFLUX RATIO 20-5:1. FIFTEEN STRIPPINGS (10DEGREES FRACTIONS) WERE TAKEN AND FURTHER SEPD. CHROMATOG. ON POLYETHYLENE COLUMNS PACKED WITH SILICA GEL (30-50 MESH: HEATED 1ST FOR 6 HR TO 70-100DEGREES AND THEN FOR 30 HR TO 150-70DEGREES). TWO COLUMNS WERE USED: (A) 12 M TIMES 35 MM PACKED WITH 12 1 ADSORBENT WITH 1.2-KG FRACTIONS AND 8 1. ME SUB2 CO ADDED WITH 0.5 HR.; AND (B) 12 M TIMES 18 MM PACKED WITH 3 1. ADSORBENT WITH 0.3-KG FRACTIONS AND 3 L. ME SUB2 CO WERE USED THE ME SUB2 CO BEING EXPELLED WITH H SUB2 O. FRACTIONS B. LESS THAN 200DEGREES NEED 1-2 CHROMATOGRAPHIC SEPNS.; HIGHER FRACTIONS REQUIRE SEVERAL REPETITIONS OF THE PROCESS. THE CONDD. SAMPLES WERE SEPD. INTO SULFIDE, THIOPHENE, AND HYDROCARBON FRACTIONS OF MOL. WT. 140-205. FACILITY: INST. ORG. KHIM., UFA, USSR.

UNCLASSIFIED

USSR

UDC 546.24

YANAKI, A. A., and OBOLONCHIK, V. A., Institute of Problems of Material, Science, Academy of Sciences, Ukrainian SSR

"Hydrogen Telluride Method for Preparing the Tellurides of Transition Metals"

Moscow, Neorganicheskiye Materialy, Vol 9, No 12, 1973, pp 2098-2102

Abstract: Metal tellurides which form stable hydrides may not be prepared from powdered metals. However, they may be prepared from the thermodynamically unstable oxides and salts by being reduced in an $H_2Te + H_2$ atmosphere. During this process, the stable hydrides are not formed. $MnTe_3$, $ReTe_2$, WTe_2, and $MoTe_2$ were prepated from respective oxides. Cr_2Te_3 was prepared from $CrCl_3$, $VTe_{1.55}$, $NbTe_2$, and $TaTe_2$ were also prepared. Traces of a few different oxides, such as $ReTe_{2.61}$ and Mo_3Te_4 were present. Ta_2O_5 did not react to form the telluride. Several modifications are suggested for elements which do not react according to the normal scheme. Crystallographic data for the prepared tellurides were determined by x-ray analysis. The variations in composition as a function of temperature and reaction time were also measured.

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USSR

UDC 669.85/.86.051

OBOLONCHIK, V. A., and YANAKI, A. A.

"Method of Synthesis of Some Tellurides of Rare Earth Metals"

V sb. Kal'kogenidy (Chalcogenides--collection of works), Vyp 2, Kiev, "Naukova Dumka", 1970, pp 141-148 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G163)

Translation: The possibility of obtaining La, Ce, Dy, and Tu tellurides from their chlorides is studied. It is assumed that rare earth metals form only from dichlorides. The process of formation of Ce, Sm, Eu, and Yb from more easily available trichlorides flows according to the proposed diagrams: $2MeCl_3 + H_2 \rightarrow 2MeCl_2 + 2HCl$; $MeCl_2 + Te(H_2Te) + H_2 \rightarrow MeTe + 2HCl$. Equally, the following reaction takes place $MeCl_3 + Te_r(H_2Te) + H_2 \rightarrow Me_xCl_y - Te_z + HCl$. Stoichiometric tellurides can be obtained while attaining temperature of the instability of $Me_xCl_yTe_z$. The remaining rare earth metals, with the exception of Tu, form stable compounds of the type $Me_xCl_yTe_z$. It is assumed that at the temperature $>1100^\circ$ these compounds are unstable and will create a possibility of obtaining rare earth metal tellurides. However, such an assumption will have to be verified. 2 ill., 1 table, 8 bibl. entries. S. Krivonosova

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USSR

UDC 669.27/.87.051

OBOLONCHIK, V. A., PROKOSHINA, L. M., and FEDORCHENKO, V. P.

"Production and Some Physicochemical Properties of Selenides of Transition Metals"

V sb. Khal'kogenidy (Chalcogenides--collection of works), Vyp 2, Kiev, "Naukova Dumka", 1970, pp 130-141 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G162)

Translation: Results are presented of an investigation of the technology of producing diselenides (D) with the help of the interaction of metallic powders of transition metals, and also of their oxides and salts with H_2Se and Se vapors in an Ar stream. The technological regimes of D production are shown. Investigation is conducted of the thermal stability of Nb and W D in an Ar stream, and of their electrophysical properties. The experimental data attest to the metallic nature of the conductivity of Ti and Nb D and semiconducting properties of Mo, W, and Zr D. 5 ill., 3 tables, 17 bibl. entries.

S. Krivonosova

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USSR

UDC 661.8

OBOLONCHIK, V. A., and PROKOSHINA, L. M., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Obtaining Titanium Diselenide and Some of Its Properties"

Kiev, Poroshkovaya Metallurgiya, No 8, 1971, pp 31-35

Abstract: Conditions for obtaining titanium selenides by the reaction of hydrogen selenide with the metal oxide and elemental powder, as well as by the reaction of selenium vapor with metal powder in argon were investigated. A graphite boat containing the metal oxide or metal powder was placed in a quartz reactor. The synthesis of hydrogen selenide was conducted in the same reactor in the low-temperature zone by the reaction of hydrogen with selenium at 550°C. The following starting materials were used: selenium used for rectifiers; powder titanium, grade IMP-1, titanium (dioxide, high-purity), and pure argon, grade A. At temperatures up to 1400° the dioxide does not react with hydrogen selenide. Selenium was initially obtained only at the surface of the powder in the boat, and within the powder a stable hydride TiA_2, with the appearance of metallic titanium, was formed. Its formation began at 200° and proceeded rapidly at 300°. Titanium diselenide was obtained by the reaction of selenium vapors in an argon or helium current. Formation of diselenide evidently proceeds through the monoselenide (600°). Titanium diselenide (23.5%) by weight (Ti and 76.5% Fe) is formed at 1000-1200°C, pink-violet, close to

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USSR

OBOLONCHIK, V. A., et al, Kiev, Poroshkovaya Metallurgiya, No 8, 1971, pp 31-35

the composition $TiFe_2$ ($TiSe_{1.48}$) with lattice constants (actual) a = 3.54 and c = 6.00 AU, hexagonal structure, of the CdI_2 type; pyonometric density 5.22 g/cm3, and x-ray density -- 5.26 g/cm3. Several properties of the diselenide were studied: the compound begins to decompose markedly at 700°. After annealing at 1350° the diselenide contains almost 13% less selenium than in the initial product, though its crystalline structure remains unchanged. The Mi-H bond is stronger than the Me-Se bond, and at 1300-1350° the hydride does not completely decompose. The diselenide is soluble in water freed of oxygen, with prolonged boiling, and is not soluble in dilute nonoxidizing acids. It dissolves with heating in concentrated sulfuric and nitric acids.

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USSR

UDC 669.77/78.776

OBOLONCHIK, V. A.

Selenidy (Selenides), Moscow, Metallurgiya, 1972, 296 pp

Translation of Introduction: Compounds of elements of the main subgroup of the sixth group of the periodic system with metals and certain elements of other groups have historically been called chalcogenides, i.e., compounds of chalcogens (sulfur, selenium, tellurium and polonium) with other elements. The word "chalcogen" apparently signifies ore-forming. The Greek word chalkos means copper. In 1922, V. M. Gol'dshmidt introduced the name chalcosphere which supposes that the middle layer of the earth between the iron core and silicate crust consists mainly of oxides and sulfides (selenides, tellurides) of iron, copper, and other heavy metals, i.e., ores.

Although oxygen is also a chalcogen, usually compounds of elements with oxygen in inorganic chemistry and engineering are classified as oxides.

The word "chalcos" is used in metallurgy and geochemistry. The term chalcogen for elements -- sulfur, selenium, tellurium -- was ratified by the International Organization for Pure and Applied Chemistry (IUPAC).

USSR

OBOLONCHIK, V. A., Selenidy (Selenides), Moscow, Metallurgiya, 1972, 296 pp

Selenium and tellurium form a large number of binary compounds of which many are similar to sulfur compounds. Selenides and tellurides are also encountered in nature and mostly accompanied by sulfide deposits. Copper, silver, mercury, lead, nickel, cobalt, and bismuth are normally found with selenium. Tellurium has been associated with silver and gold and rarely with copper, lead, mercury, bismuth, nickel, and platinum.

In the development of modern inorganic chemistry the questions of element reaction with chalcogens (selenium, tellurium) acquires substantial significance.

All the elements, with the exception of inert gases, nitrogen, and iodine, can react directly with selenium. Nitrogen and iodine indirectly form compounds with selenium. Tellurium does not react with inert gases and boron (with boron it is still not definitely indicated) and with the remaining elements forms compounds.

Not all compounds of selenium and tellurium have a strict stoichiometric composition; many of them are solid solutions of variable composition.

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OBOLONCHIK, V. A., Selenidy (Selenides), Moscow, Metallurgiya, 1972, 296 pp

Compounds of variable composition are characteristic for the transition metals, especially for elements of groups IV-VI of the periodic system, triads of iron, as well as bismuth and copper.

In contrast to selenides, tellurides have a greater tendency toward the formation of compounds of variable composition, which can be explained apparently by the high metallicity of tellurium in comparison with selenium. These compounds, however, are unstable. Thus, for example, rhenium selenides do not have a variable composition, but rhenium telluride has a large region of homogeneity and is a phase with a variable composition; it possesses low thermal stability and upon heating the volatile element -- tellurium -- easily separates and leaves the metal. This same property is characteristic for molybdenum and tungsten tellurides.

During formation of chalcogenides there occurs a transition of valency electrons of the metals to the chalcogens with a corresponding addition to their electron configuration s^2p^4 and in the limiting case to s^2p^6; simultaneously there is the tendency, with alkaline metals, of the chalcogen atoms to form covalent groupings between themselves (the formation of

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OBOLONCHIK, V. A., Selenidy (Selenides), Moscow, Metallurgiya, 1972, 296 pp

polysulfides is explained by this). As a metallic element, tellurium does not exhibit this tendency.

For chalcogenides of the d-transition metals, the overlapping of several types of bonding is characteristic: covalent bonding -- between the chalcogen atoms, and metallic and ionic bonding -- between the metal atoms on one hand and between atoms or groups of atoms of the chalcogen on the other hand. Most of the compounds have high melting points which decrease in the series S-Se-Te.

Selenides and tellurides were produced synthetically as much as 70 years ago, although the technology of producing them has evolved very little.

This book gives an idea about which is the best method of producing any chalcogenide. The mechanism of selenide synthesis with the participation of hydrogen selenide presents interest as well as production of tellurides by reaction of oxides, salts, and metals with hydrogen telluride at the instant of its formation from simple substances. From these positions the possibility of selenide and telluride synthesis with all the elements of the periodic system is examined.

USSR

OBOLONCHIK, V. A., Selenidy (Selenides), Moscow, Metallurgiya, 1972, 296 pp

Table of Contents:

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OBOLONCHIK, V. A., Selenidy (Selenides), Moscow, Metallurgiya, 1972, 296 pp

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USSR

OBOLONCHIK, V. A., Selenidy (Selenides), Moscow, Metallurgiya, 1972, 296 pp

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USSR

UDC: 619:616.986.7'036.2:636

SOLOSHENKO, I. Z., PETROV, Ye. N., SHOROKHOV, V. V., DROGUN, A. G., REYCHUK, Ye. A., and OLOLONKOVA, L. K., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Sciences USSR, and Moscow Technological Institute of Meat and Dairy Industry

"Problems of Leptospirosis Epizootiology"

Moscow, Veterinariya, No 12, Dec 70, pp 41-43

Abstract: Cattle, hogs, horses, and sheep in several regions of the Soviet Union were subjected to serological studies (microagglutination), culturing kidney suspensions, and microscopic examination of urine, with subsequent infection of guinea pigs. Leptospira tarassovi and pomona were agents in hogs. The possibility of infection in the Ulyanovsk region by L. grippotyphosa is not excluded. Cattle appear to be infected by L. pomona, hebdomadis, and tarassovi. Antibodies for tarassovi, icterohaemorrhagiae, and australis were most frequently observed in the blood sera of horses. The L. ballum group was found in the sera of sheep and goats. Antibody titers in all serological groups were low. Acute infections did not exist among test animals.

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USSR

UDC 621.791.85.03

NAZARENKO, O. K., ZHUVAZA, L. I., OBOLONSKIY, A. P., BARANOV, G. V., Institute of Electric Welding imeni Ye. O. Paton of the Ukrainian SSR Academy of Sciences

"Cathode-Ray Unit with Programmed Control and Television Observation of the Welding Process"

Kiev, Avtomaticheskaya Svarka, No 7, 1971, pp 53-54

Abstract: A cathode-ray device of the U-342 type in which all the basic welding operations have been automated is described. The device was built at the Institute of Electric Welding imeni Ye. O. Paton. It permits preliminary and subsequent heat treatment of the products and welding of them. Five basic parameters of the operating conditions are recorded during the welding process: the beam current, the accelerating voltage, the current of the magnetic focusing system of the gun, the welding speed, and the vacuum in the welding chamber. The electric circuit of the device permits programming for automatic execution of three operations: preliminary treatment of the weld by a sharply focused low-power beam to remove contamination from the edges, welding by a sharply focused beam, and repeated welding by an unfocused beam of lower power with simultaneous transverse scanning of it with a frequency of 50 hertz. The device has been introduced into industrial use on automated lines.

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USSR

UDC 621.382.002

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VOZHENIN, I.N., KOROBOV, A.I., NAUMCHENKO, A.S., OBOROTOV, A.F., REPIN, V.A.

"Quality Of Films Of Barium-Borosilicate Glasses Produced In A Vacuum By Thermal Evaporation"

Elektron. tekhnika. Nauch.-tekhn.sb. Upr.kachestvom i standartiz (Electronics Technology. Scientific-Technical Collection. Quality Control and Standards), 1971, Issue 1(7), pp 84-90 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B432)

Translation: The properties of a film of optimum composition 20 B_2O_3:80 C_2 produced by vacuum-thermal evaporation by the flash method of powdered glass are equal to the basic properties of massive glass of the same composition. The films differ from massive glass by the increased defectiveness of the structure and the deficiency of oxygen. By annealing of the films in air and introduction of the corresponding impurities it is possible to improve the structure and to vary the electrical properties. The infrared absorption spectra of the films is presented, as well as the dependence of the breakdown voltage of the films on the thickness. With the introduction of BaO into the films, the dielectric constant of the films is linearly increased to six. During this, the tangent of the loss angle is smoothly increased and at 2-3 orders of magnitude, the breakdown voltage and the volume resistivity are decreased. Simultaneously, the magnitude of the internal mechanical stress is reduced. 6 ill. 2 tab. 8 ref. I.M.

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Welding

USSR

UDC 621.791.053:62.192.47:669.715

OBOTUROV, V. I., Engineer, YEROKHIN, A. A., Doctor of Technical Sciences

"Means of Eliminating Porosity During Welding of AMg6 Alloy in Various Positions"

Moscow, Svarochnoye Proizvodstvo, No 1, Jan 70, pp 17-18

Abstract: Porosity of AMg6 alloy welds is caused mainly by moisture contained in the oxide film of the parent metal and electrode. Thorough cleaning of the filler wire and the edges to be welded is an effective way of eliminating porosity. However, experience shows that the recommended means of surface preparation for welding in a downhand position does not guarantee pore-free welds in other positions. To find the most favorable position for welding the AMg6 alloy, specimens of the alloy (2 and 4 mm thick) were butt welded on an automatic argon-shielded arc welder.

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USSR

OBOTUROV, V. I., et al., Svarochnoye Proizvodstvo, No 1, Jan 70, pp 17-18

Before welding, the specimens and filler wire were pickled in alkali, and the welding edges were thoroughly cleaned with a scraper. After such surface preparation, porosity depends only on the welding position. It was found that porosity increases when the angle of rotation of a welded specimen increases from 0 to 180°, and reaches the maximum at the overhead position. The porosity of joints welded in the overhead position can be practically eliminated by applying flux to the other side of the parts to be welded. The time between the preparation and welding should be as short as possible to prevent oxidation and accumulation of dust on the cleaned parts.

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1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EMERGENCE OF CHANNELS IN THE SPACE BEHIND THE SHAFT OF WELLS AFTER CEMENTING -U-

AUTHOR-(03)-BULATOV, A.I., OBOZIN, O.N., KUKSOV, A.K.

COUNTRY OF INFO--USSR

SOURCE--GAZOV. PROM. 1970, 15(2), 3-6

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SEAL, WELL DRILLING MACHINERY, CEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/2040 STEP NO--UR/0492/70/015/002/0003/0006

CIRC ACCESSION NO--AP0122269

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122269

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEDIMENTARY INSTABILITY OF THE SEALING SOLN., WHICH CAN CAUSE CHANNELING, ESP. WHEN THE WELL LINING BECOMES TWISTED, IS OVERCOME BY USE OF A SOLN. WITH LOW WATER LOSS. LAB. APP. FOR MEASURING SEDIMENTATION AND CHANNELING IS DESCRIBED.

FACILITY: KRASNODARSK, FILIAL VNIINEFT, KRASNODARSK, USSR.

UNCLASSIFIED

USSR

UDC 615.361.419.014.41

PUSHKAR', N. S., OBOZNAYA, E. I., SHAKHBAZOV, V. G., DATSENKO, B. M., and ITKIN, Yu. A., Ukrainian Institute of Advanced Training of Physicians, Ministry of Health USSR, Kharkov

"The Effect of Polyethylene Oxide on Myelokaryocyte Respiration After the Freezing of Bone Marrow to -196°C"

Moscow, Problemy Gematologii i Perelivaniya Krovi, No 4, 1971, pp 52-54

Abstract: The effect of freezing on the intensity of oxygen uptake by bone marrow cells from cancer patients and healthy persons was studied in relation to the rate of freezing to -196°C and the type of cryophylactic agent used (glycerin, DMSO, and the newly developed polyethylene oxide). Myelokaryocytes from healthy persons take up oxygen much more rapidly than those from cancer patients. The addition of polyethylene oxide to a suspension of the cells before freezing had little effect on oxygen uptake, whereas the addition of DMSO or glycerin depressed it sharply. Two-stage freezing (at the rate of 1°/min to -15° and then at the rate of either 300° or 10°/min to -196°) was more effective in protecting the cells than single-stage freezing (from 0 to -196° at the rate of either 300°C/min or 10°C/min). Bone marrow frozen with polyethylene oxide has already successfully undergone clinical trails.

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USSR UDC: 534.2

OBOZNENKO, I. L. and TARADANOV, L. Ya.

"Time Characteristics of Signals Reflected From an Infinite Circular Cylinder and a Sphere"

Vestn. Kiyev. politekhn. in-ta. Ser. radiotekhn. i elektroakust. (Herald of the Kiev Polytechnical Institute, Radio Engineering and Electroacoustics Series) No 9, 1972, pp 151-153 (from RZh--Fizika, No 9, 1972, Abstract No 9Zh508)

Translation: Computations are made of the time characteristics of signals reflected from an infinite circular cylinder and a sphere on which are incident pulse signals with monochromatic filling [sic]. The computations are made in the Kirchhoff approximation. An inverse Fourier transform is used. Author's abstract.

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UDC: 534.2

USSR

GELIS, V. I. and OBOZNENKO, I. L.

"Dispersion of a Plane Wave by an Acoustically Rigid Ellipsoid of Low Eccentricity"

Vestn. Kiyev. politekhn. in-ta. Ser. radiotekhn. i elektroakust. (Herald of the Kiev Polytechnical Institute, Radio Engineering and Electroacoustics Series) No 9, 1972, pp 108-110 (from RZh--Fizika, No 9, 1972, Abstract No 9Zh503)

Translation: The authors consider the problem of the dispersion of a plane wave by an acoustically rigid ellipsoid with low eccentricity for an arbitrary angle of incidence of the wave. Based on the method of small perturbations, a solution of the problem using a system of eigenfunctions in a spherical system of coordinates is found. Computations are given for the potential of the scattered wave in the case of an axially incident plane wave on stretched-out and flattened ellipsoids with various eccentricities and wave dimensions.

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OBOZOV, N. N.

SO: JPRS 53103
12 May 71

COMPARATIVE ANALYSIS OF PSYCHOMOTOR CHARACTERISTICS
USING DATA FROM INDIVIDUAL AND GROUP EXPERIMENTS

pp 43-51

N. N. Obozov (Psychology)

The purpose of this work was to make a comparative analysis of psychomotor characteristics in individual and group experiment situations.

By analyzing each psychomotor characteristic individually we found that certain changes in one of the characteristics induce a certain change in some other characteristic. Therefore the analysis was made not only for each characteristic individually, but also for various indicators and indicies in a system of characteristic inter-relationships such as: Speed, accuracy, efficiency, coefficient of success, and coefficient of economy. Correlational analysis of indicies and indicators of different interacting characteristics was exploratory in a way, making it possible, when analyzing the extensive and diverse data from individual and group experiments, to concentrate attention on those associations that are of interest for creating a prognosis of group results on the basis of data from an individual experiment, and for organizing optimal small groups.

Data obtained by us (Table 1) indicate that the average economy of an individual experiment is higher than the average economy of a group experiment, but the success of group activity is higher than that of individual activity. While the success of the work of a group increases, its economy decreases. It thus appears that an increase in success of group work involves great economic expenditures -- that is, although the group is able to do its work with greater success, the work is more costly.

By comparing the coefficient of success and the coefficient of economy for specific operations it can be seen that as the operation becomes more complex there is a decrease in success but an increase in economy; in other words, as psychomotor activity becomes more complex there occurs a reduction of success with a corresponding decrease of both individual and group expenditures. Here the greater drop in indices of an individual experiment (the difference in success [illegible] operations of the first and second order of complexity) [illegible] to the greater drop between two operations with respect to data on their economy.

UNCLASSIFIED PROCESSING DATE--02OCT70

1/2 012

TITLE--SEISMOLOGISTS TO INVESTIGATE AREAS OF RECENT TREMORS IN TURKMEN SSR

-U-

AUTHOR--OBRAMENKO, V.

COUNTRY OF INFO--USSR

SOURCE--ASHKHABAD, TURKMENSKAYA ISKRA, 1 APRIL 1970, P 4

DATE PUBLISHED--08APR70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOPHYSIC EXPEDITION, SEISMIC SHOCK, SEISMICITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1709 STEP NO--UR/9026/70/000/000/0004/0004

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2/2 012

CIRC ACCESSION NO--AN0108080

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LATE AT NIGHT ON SATURDAY (4 APRIL 1970) UNDERGROUND TREMORS OF CONSIDERABLE FORCE WERE FELT IN KIZYL-ATREK AND NEIGHBORING VILLAGES. DURING THE DAY SIMILAR SHOCKS OCCURED IN THE REGION OF KAAKHKA. SOME ASHKHABADIANS ALSO NOTICED THE BARELY PERCEPTIBLE ECHOES. AT THE PRESENT TIME THERE IS NO SYSTEM OF SEISMOLOGICAL OBSERVATIONS IN THE REGIONS WHICH EXPERIENCED THE UNDERGROUND TREMORS. FOR THE REASON THE SEISMOLOGISTS AND OTHER SPECIALISTS OF THE INSTITUTE OF PHYSICS OF THE EARTH AND ATOMOSPHERE OF THE ACADEMY OF SCIENCES TURKMEN SSR DECIDED TO FORM AN EXPEDITION TO THE REGIONS OF KIZYL-ATREK AND KAAKHKA TO DETERMINE THE NATURE OF THE SHOCKS AND DESCRIBE THEM. R. D. NEPESOV, HEAD OF THE SEISMOLOGY DEPARTMENT OF THE INSTITUTE, AND SCIENTIFIC WORKER G. L. GALINSKIY LEFT ASHKHABAD ON THE TRAIL OF THE UNDERGROUND STORMS. FOR A PERIOD OF 10 DAYS THEY WILL TOUR THE REGIONS WHERE THE SHOCKS OCCURRED, QUESTIONING THE INHABITANTS AND ENTERING DATA ON SPECIAL CHARTS. THE COLLECTED MATERIALS WILL BE STUDIED CAREFULLY AND PROCESSED. RESULTS WILL HELP SEISMOLOGISTS TO UNDERSTAND BETTER THE NATURE OF THE UNDERGROUND TREMORS WHICH OCCUR IN VARIOUS REGIONS OF OUR REPUBLIC.

UNCLASSIFIED

Surgery

USSR

OBRAMENKO, V.

"The Operation Is Going On"

Ashkhabad, Turkmenskaya Iskra, 21 January 1970, p 4

Abstract: A vivid description of the operating procedures of the neurosurgeon Volobuyev is provided. For six tedious hours, with painstaking thoroughness and acrylic resin plastic, he restored the shape of the face and skull in a patient who had sustained a seriously deforming injury to the head and face several months before. At that time Ismayil Ayubovich Rustamov gave emergency treatment, removing spicules of bone from the brain and applying life-saving measures. At the Turkmen SSR Neurosurgical Institute, Irene T. Solomentseva has restored the use of hands and feet in 135 patients, using skillful neurosurgical restorative measures. Their neurosurgeons, ever-active, ever-learning, are short of beds in their hospitals.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202230008-2"

USSR

UDC 612.821.2

OBRAZTSOVA, G. A., Laboratory of Comparative Ontogenesis of Higher Nervous Activity, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"Age-Associated Changes in Long-Term Memory in Animals"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova, Vol 22, No 4, Jul/Aug 72, pp 752-759

Abstract: Simple conditioned reflexes were developed in puppies aged about 1 month, 1.5-2 months, and 3-5 months. The youngest and the oldest animals learned at a significantly slower rate than those of the middle group. After a pause of 2 months, none of the youngest animals responded to the conditioned stimulus. In the middle group, memory was better, while in the oldest group all animals responded to the stimulus and were the fastest in recalling the operation required to obtain food. Similar results were obtained in rats aged 1-12 months, in whom the conditioned reflex consisted of avoiding an electrical shock. The oldest rats learned slowly but displayed the best memory after an equally long pause. Thus, an inverse correlation was observed between the speed of conditioning and the retention of the conditioned reflex, which evidently is due to differences in the mechanisms underlying short- and long-term memory.

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USSR

UDC 612.66+612.833.81

OBRAZTSOVA, G. A., DOBROVOL'SKAYA, V. N., FEDOROV, V. K., BOGDANOVA, A. Ye.,
Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR,
Leningrad

"The Relation of Training and Long-Term Memory in the Ontogenesis of Rats"

Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 3, 1972, pp 763-765

Abstract: The ontogenetic method of investigation permits discovery of the functional characteristics of the brain activity from the time of their development when the relations are simpler and more available for analysis than in mature animals. A study was made of the characteristics of the relation of the education rate and the retention of the defensive conditioned reflex of active escape in the postnatial antogenesis of a rat. The reproduction of the developed habit in the case of "complete" and "incomplete" training as a different mechanism [J. A. Deutsch, et al., Nature, No 213, 742, 1967] and with a known degree of training, changes in reflexes are almost never observed even after a prolonged interruption (6-8 months). Thus, the so-called "incomplete" training was used.

The development of a conditioned reflex of active escape takes place most rapidly in month-old baby rats. The dynamics of changes in the number of

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OBRAZTSOVA, G. A., et al., Doklady Akademii Nauk SSSR, Vol 204, No 3, 1972, pp 763-765

conditioned reflexes of active escape from experiment to experiment and from combination to combination determined by the linear regression coefficient demonstrate that the least increment is observed in 12-month old rats. The period of optimal training in rats up to 1 year old does not coincide with the period of best retention of memory of the developed habit: when developing the escape reflex, the 1- and 2-1/2-month-old rats were the best, and when checking for retention they were the worst. The basis for poor memory in the defined ontogenesis period is the following: a) more pronounced nature of the induction relations at an early age, b) greater susceptibility of unreinforced associations to interfering effects, c) insufficient myelinization of the gray matter of the cerebral cortex.

2/2

Glass and Ceramics

USSR

UDC [546.19+546.23+546.24]:666.1

OBRAZTSOV, A. A., and BORISOVA, Z. U., Leningrad State University imeni A. A. Zhdanov

"Electric Conductivity and Softening Point of Glasses in the As-Se-Te System"

Moscow, Neorganicheskiye Materialy, Vol 6, No 8, Aug 70, pp 1417-1421

Abstract: This work presents results of measurement of the temperature dependence of electric conductivity and the softening interval of glasses for seven cross sections covering practically the entire area of glass formation in the As-Se-Te system. Electric conductivity was measured in the temperature interval from room temperature to T_g. Reproducibility was good for specimens taken from parallel melts. The dispersion of conductivity values did not exceed 0.1-0.2 orders of magnitude. The conductivity of the glasses varied from 10^{-11} to 10^{-4} $ohm^{-1} \cdot cm^{-1}$, the activation energy of conductivity -- from 1.7 to 0.9 eV. Replacement of Se by Te causes an increase in conductivity and decrease in activation energy. The softening temperature of the glasses varies between 50 and 170°C. As the chalcogen content increases, T_g decreases. The nature of the change of T_g as a function of Se/Te ratio, as well as the change in conductivity at the

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USSR

OBRAZTSOV, A. A., and BORISOVA, Z. U., Neorganicheskiye Materialy, Vol 6, No 8, Aug 70, pp 1417-1421

at the softening temperature (-log σT_g) indicate changes in the structure of the glasses as Se is replaced by Te.

2/2

UDC 582.035

USSR

OBRAZTSOV, A. S., and GRIGORYAN, A. K. All-Union Scientific Research Institute of Fodder, All-Union Academy of Agricultural Sciences imeni V. I. Lenin; Scientific Research Institute of Agriculture, Ministry of Agriculture Armenian SSR

"Reaction of Plants to Artificial and Natural Shortening of the Day"

Yerevan, Biologicheskiy Zhurnal Armenii, Vol 23, No 6, Jun 70, p 113

Translation: The characteristics of the reactions of plants to artificial shortening of the day in northern regions and the natural shortening in connection with extending the planting into southern regions were investigated. In the reactions of plants to artificial shortening of the day, there is a cumulative effect of the indirect effect of the photoperiod, depressions of growth processes connected with a shortage of photosynthesis products and disturbance of the natural course of illumination. The plants are deprived of morning and evening light, characterized by low intensity and comparatively high content of the long waves of the spectrum: Full darkness is suddenly followed by light of high intensity, and in the evening bright light is followed by total darkness. With natural shortening of the day, the course of illumination is not disturbed, and, as is seen from experiments, the photoperiodic reaction appears weaker than with artificial shortening in experiments. The plants (corn, sorghum, barley, peas)

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OBRAZTSOV, A. S. et al, Biologicheskiy Zhurnal Armenii, Vol 23, No 6, Jun 70, p 113

which react mildly to shortening of the day in experiments, did not show any appreciable photoperiodic reaction to artificial shortening of the day by extension of the planting southward to 55° to 40° N. The forms of plants with a high degree of photoperiodic reaction, near the obligatory short-day or long-day (perilla, late varieties of vetch, oats) reacted both to the artificial and to the natural shortening of the day, only to a lesser degree. They are capable of blooming normally in a much wider range of lengths of day in nature than in experiments with artificial shortening.

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USSR

UDC 539.3

OBRAZTSOV, I.F. and VASIL'EV, V.V.

"Some Problems of Optimum Design of Filament Reinforced Plastics"

Moscow, Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 201-216

Abstract: Review of literature on the subject matter is made.

First the case of a cylindrical plastic shell reinforced by left and right hand spiral filaments and subject to internal pressure and axial load is considered. Equations (1) give the stress for the two loads. Equation (3) is the condition of equality of the two stresses. The wall thickness of the pressure vessel made out of filament is 1.5 times the wall thickness of a solid wall pressure vessel made of the same material. It is assumed that all the load is carried by the filament and none by the binder.

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USSR

OBRAZTSOV, I. F., and VASIL'EV, V. V., Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 201-216

Next the shells formed by wound tape are considered. In this case the binder cracks under load equal to 10-20% of the load causing failure of the tape.

An analysis is also made of a general case of shell of revolution. Conditions for uniform stresses are given.

2/2

USSR UDC: 51.621.391

BELYAKOVA, G. Ya., OBRAZTSOV, V. V.

"An Algorithm for Minimization of Binary-Decimal Decoders"

V sb. Algoritmiz. protsessov i sintez. releyn. ustroystv (Algorithmization of Processes and Synthesis of Relay Devices--collection of works), Frunze, "Ilim", 1971, pp 84-89 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V430)

[No abstract]

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USSR

UDC 535.853.34

OBREIMOV, I. V., Academician, and STREL'TSOV, Ye. A.

Name OK

"Monochromator With Concave Diffraction Grating for a Large Interval of Wave Lengths"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 10, Oct 72, pp 46-51

Abstract: A high-transmission monochromator with concave diffraction grating, which makes possible to eject beams of light of up to 0.1 nm monochromatissity, is described. The installation of the concave diffraction grating, its base, and setting in motion are discussed by reference to diagrams. The exit slit of the monochromator is located on the Rowland circle, which has a diameter equal to the radius R of the grating. In this case, the image of the slit by the wave length λ is also located on the Rowland circle at a point determined from a given function. Values of the length of waves ejected by the exit slit of the monochromator, in the case of R/2=500 mm, are tabulated. A 1 mm displacement of the motion screw corresponds to the 6.67 nm change of the wave length. The individual steps in setting the monochromator are explained and its qualities, as a stability of readings during a half-year period, are indicated. Eight illustr., two tables, two formulas, two biblio. refs.

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USSR

UDC 539.194

[redacted] Academician

"Bending Oscillations of Chain Molecules"

Moscow, Doklady Akademii Nauk SSSR, vol 204, No 4, 1972, pp 824-827

Abstract: The equation for the bending oscillations of molecular chains is developed by considering a number of material points of specified mass lying along the X-axis of a Cartesian plane, where the bending consists in deviating these points a small distance above and below the X-axis in the Y direction. Symmetrical and antisymmetrical oscillations are discussed and compared with compression oscillations. It is noted that the first bending oscillations are possible beginning with N = 3 only - i.e., at the third point from the coordinate origin while the first compression oscillation is possible only with N = 2. The calculations for N > 7 were made on the "Vil'nyus" computer according to the Lobachevskiy method, and the solutions for the equation [N] = 0 were developed at the Computing Center of the USSR Academy of Sciences, Siberian Division, at Novosibirsk. The author expresses his thanks to G. I. Marchuk and I. A. Palitsyna for their assistance.

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Epidemiology

USSR

UDC 616.921.5-07

OBREKHT, S. D., KOVDYSHEV, B. V., PINSKIY, Z. A., and KARAULOV, V. S.

"Clinical and Epidemiological Characteristics of Influenza During the 1972-1973 Epidemic"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 11, 1973, pp 44-46

Abstract: Late in December 1972 an influenza A_2 epidemic broke out among soldiers in coastal units and garrisons who had come from such large cities as Leningrad where an influenza epidemic among the civilian population had already reached substantial proportions. The sick rate peaked during the first 10 days of January and then declined sharply. Most of the personnel were not vaccinated until shortly before the outbreak because the incidence of influenza and other acute respiratory diseases remained low as late as November. The sick rate was highest among the young draftees. In general, the course was mild or moderately severe but complicated by pneumonia (much more frequently than in epidemics of previous years) in about 20% of the cases. The average number of bed-days in uncomplicated cases was 7.5. Treatment with antigrippine proved to be efficacious and the pneumonias yielded quickly to antibiotics. The authors conclude that such prophylactic

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USSR

OBREKHT, S. D., et al., Voyenno-Meditsinskiy Zhurnal, No 11, 1973, pp 44-46

measures as anti-influenza serum, sulfanilamides, and oxolin ointment are much less useful than vaccinations if given well in advance of a predicted epidemic.

USSR

UDC 614.484

BAUMAN, V. M., OBREKHT, S. D., SAAKOV, G. T., Col Med Serv; and FEDOROV, M. N., Candidate of Medical Sciences

"Gaseous Methods of Disinfection"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 10, 1972, pp 54-57

Abstract: Because there has been heretofore no practical solution to the problem of disinfecting synthetic materials, documents, currency devices, and small-size expensive apparatus, the authors devote this article to the status of the gaseous method of disinfection which they regard as the solution since, as recent research has shown, it is convenient and has no negative qualities. In this chamberless method, a promising disinfectant is a mixture of ethylene oxide and methyl bromide (known under the Russian acronym of OKEBM) which is prepared under industrial conditions and consists of one part ethylene and 2.5 parts methyl bromide by weight. It is a uniform, transparent fluid with a pungent odor, a liquid below +8.5° C under ordinary air pressure conditions, and is capable of being stored for long periods. A table of the antiseptic properties of the gas acting on various materials under various conditions is presented. The results of tests made to determine

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USSR

BAUMAN, V. M., et al., Voyenno-Meditsinskiy Zhurnal, No 10, 1972, pp 54-57

its germicidal capacity are also given together with a sketch of the equipment used for administering it. Research performed by the authors shows that the gaseous method of disinfection may become standard under field and barracks conditions. It is also applicable to surgery and other hospital procedures.

USSR

SOFRONOV, B. N., VIKHMAN, A. A., KARASIK, O. A., OBREZHA, G. N., and POLENOVA, I. M., Institute of Experimental Medicine, Academy of Medical Sciences, USSR, Leningrad

"Modern Aspects of Nonspecific and Specific Suppression of Immunological Reactivity," pp 75-88

Abstract: Various ways and means of suppressing immunogenesis are discussed in the article. Of the many methods studied, the most important are surgical methods -- extirpation of such immunocompetent organs as the spleen, thymus, and some groups of lymph nodes; physical methods -- application of radiation; chemical methods -- administration of chemical preparations; and biological methods -- based on the action of antisera against antigens in lymph tissue. Investigations established, however, that removal of immunocompetent organs from young animals tends to hinder the further development of the lymph system -- the main source of lymphocytes, and causes dysfunction of the lymph system and prolonged suppression of the immunological reactivity of the organism. Thymectomy and bursectomy in adult animals

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USSR

SOFRONOV, B. N., et al., "Modern Aspects of Nonspecific and Specific Suppression of Immunological Reactivity," pp 75-88

tend to weaken considerably the immunological system of the organism and retard the regenerative process of immunological reactivity. The application of ionizing radiation and chemical preparations, while suppressing immunogenesis, tends to interfere also with the development and functions of vitally important proteins and nucleic acids. The most promising method is the application of antilymphocyte sera. The use of these sera is based on the premise that antilymph antibodies while affecting lymph cells will not disturb the functions of non-lymphatic tissue cells. There are, however, some well-grounded apprehensions with respect to the utilization of antilymphocyte sera because of their possible toxic properties and content of impurities. Work done on these problems by Soviet and foreign authors is discussed.

2/2

USSR

UDC: 62:519.25

OBREZKOV, G. V. and RAZEVIG, V. D.

"Methods of Analyzing Tracking Breakdown"

Moscow, 240 pp, 1972, "Sovetskoye radio," p 2

Translation: This book presents a review of the most important methods of analyzing tracking breakdowns in closed servo circuits in automatic electronic equipment under the effects of fluctuating noise. The phenomenon of tracking breakdown in automatic frequency and phase control in automatic tracking radar circuits is used as the example. The analytic research methods given in the book are based fundamentally on Markov random process systems. Special attention is devoted to analysis of tracking breakdown using analog and digital computers. In addition to its direct application to the study of tracking breakdown, the material is useful for investigating other nonlinear phenomena in electronics and automation.

The book is designed for scientific personnel and engineers involved in the research and design of electronic tracking devices.

Six tables, 55 illustrations, bibliography of 106 titles.

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USSR

UDC: 62:519.25

OBREZKOV, G. V. and RAZEVIG, V. D.

"Methods of Analyzing Tracking Breakdown"

Moscow, 240 pp. 1972, "Sovetskoye radio," pp 238-239

Translation:

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OBREZKOV, G. V. and RAZEVIG, V. D., "Sovetskoye radio,". 1972, pp 238-239

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OBREZKOV, G. V. and RAZEVIG, V. D., "Sovetskoye radio," 1972, pp 238-239

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USSR

OBREZKOV, G. V. and RAZEVIG, V. D., "Sovetskoye radio," 1972, pp 238-239

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OBREZKOV, G. V. and RAZEVIG, V. D., "Sovetskoye radio," 1972, pp 238-239

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OBREZKOV, G. V. and RAZEVIG, V. D., "Sovetskoye radio," 1972, pp 238-239

6/6

UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 052

TITLE--ORIENTED CRYSTALLIZATION ON PHOTOELECTRIT SELENIUM LAYERS DUPLICATING THE ELECTRIC STRUCTURE OF CRYSTAL SURFACES --U-

AUTHOR-(02)-DISTLER, G.I., OBRONOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 584-7

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--CRYSTAL STRUCTURE, SURFACE PROPERTY, SELENIUM, CRYSTALLIZATION, ANTHRAQUINONE, SODIUM CHLORIDE, SUBLIMATION, RADIATION EFFECT, REACTION MECHANISM, POLYVINYL CHLORIDE, THIN FILM MEMORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 052
CIRC ACCESSION NO--AT0129921
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SE FILMS ON A NACL SUBSTRATE AND WITH THE SUBSTRATE REMOVED WERE IRRADIATED AT 400-500 M MU FROM A 1970 W INCANDESCENT ALMP USING A BLUE FILTER. FILMS OF ANTHRAQUINONE WERE SUBLIMED AT 130DEGREES ON SE PLUS NACL AT ROOM TRMP. AND ON SE FILMS WHICH HAD BEEN REMOVED FROM THE NACL SUBSTRATE WITH A POLY(VINYL CHLORIDE) RIBBON ON WHICH THE SE FILM REMAINED FOR THE STUDY OF THE CONTACT SURFACE. IN THE SUBLIMATION OF ANTRHRQUNIONE DIRECTLY ON NACL, NEEDLELIKE CRYSTALS, 10-40 MU LONG, FORMED A BIAXIAL TEXTURE, D. EQUALS 5 TIMES 10 PRIME5-10 PRIEM7-CM. PRIME2. IN THE SUBLIMATION OF ANTHRAQUINONE ON NACL COATED WITH AMORPHOUS SE, 200 ANGSTRON THICK, ORTHORHOMBIC CRYSTALS, 3-8 MU, FORMED A BIAXIAL TEXTURE, D. EQUALS 3 TIMES 10 PRIME5-5 TIMES 10 PRIME6-CM. PRIME2. THESE ORIENTED CRYSTALS FORMED BOTH IN THE LIGHT AND IN THE DARK. BUT, FOR SUBLIMATION OF ANTHRAQUINONE IN LIGHT, ON THE CONTACT SIDE OF SE THE NATURE OF CRYSTN. CHANGED. NO ORIENTATION OCCURRED FOR SUBLIMATION IN THE DARK, I.E. THE FILMS DID NOT "REMEMBER" ORIENTATION INFROMATION. TO ENDOW THE FILMS WITH "MEMORY", IT IS NECESSARY TO IRRADIATE THE FILMS WITH SCATTERED LIGHT BEFORE RENOVAL FROM THE SUBSTRATE. THE RESULTS SUGGEST A PHOTOELECTRET MECHANISM OF THE RETENTION AND TRANSMISSION OF INFORMAITON BY THE AMORPHOUS BOUNDARY OF SE LAYERS. FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

AA0044797

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 2/70

243233 SELF-INSPECTING INDUCTION DEFECTOSCOPE

does not require electro-mechanical units complicating the design and taking up space. A simple passive LC oscillating circuit is associated with the rotating sensors. The diagram shows the sensors 1 of the flaw detector 2 working in a tubular part 7 under inspection. The oscillating circuit contains an inductance 4 with ferrite core, capacitor 5 and contact 6. 3 is tuned to the working frequency of the instrument. When the work piece is not present, the resonant circuit is switched on and each time the flaw sensors 1 come past it a self-induced oscillatory signal is received and the sensor voltage modulates. The correctness of the inspecting device itself is thus shown. When a part is under inspection, switch 6 is broken and the LC circuit has no effect 22.1.68 as 1213147/25-28. S.A.OBRUCHKOV. NON-DESTRUCTIVE TEST METHODS R & D INST. (20.9.69) Bul 16/5.5.69. Class 42k. Int.Cl.G 01n.

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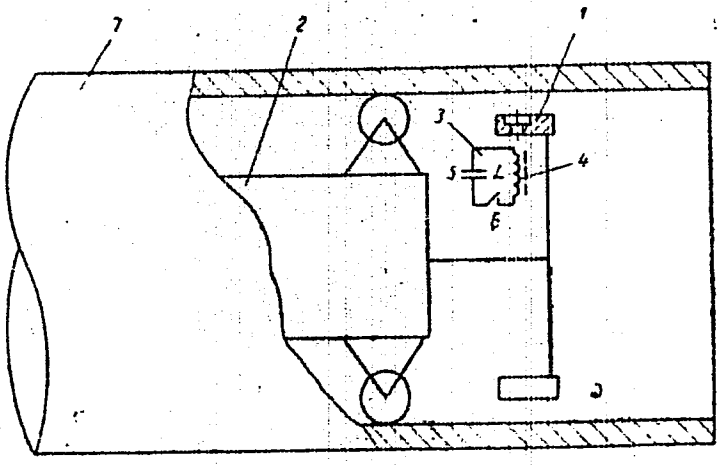

Vsesoyuznyy Nauchno - Issledovatel'skiy Institut po Razrabotke Nerazrushayushchikh Metodov i Sredstv Kontrolya Kachestva Materialo

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USSR

UDC 621.787:621.785.92:620.17

LEBEDEV, D. V. and OBSYANNIKOV, B. M., Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Crack Development in Prismatic Samples Notched On One Side Under Fatigue Load"

L'vov, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 7, No 6, Nov-Dec 71, pp 27-30

Abstract: Purpose of this work was to study the stress state and morphology of crack development under fatigue load in the elastic region of strain. Prismatic samples were made from steel Kh21N5AG7 (EP-222) having the following chemical composition: (in %) 0.1 C, 21.3 Cr, 5.4 Ni, 7.7 Mn, 0.03 Si, 0.25 N_2, 0.02 S (max) and 0.02 P(max). Using optical polarization data the authors conducted an analysis of the stress state of notched samples under fatigue load from which they ascertained that the absolute value of stress in the notch apex was maximum and 3.3 times greater than the nominal stress (1.77 kg/cm^2). The authors also discuss the morphology of crack development and the relationship of stress state and crack development. 5 figures, 2 bibliographical references.

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1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--QUANTITATIVE DETERMINATION OF CARBON, HYDROGEN, SULFUR, AND OXYGEN IN ORGANIC COMPOUNDS BY IR SPECTROSCOPY -U-

AUTHOR-(02)-OBTEMPERANSKAYA, S.I., MULLAYANOV, F.I.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 118-19

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTROSCOPY, CARBON, HYDROGEN, SULFUR, OXYGEN, QUANTITATIVE ANALYSIS, ORGANIC CHEMISTRY

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2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120261

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD WAS BASED ON THE OXION. OR THE PYROLYSIS OF THE ORG. COMPDS. TO FORM THE SIMPLE COMPDS., CO SUB2, CO, H SUB2 O, AND SO SUB2, WHICH WERE DETD. BY IR SPECTROSCOPY (J. A. KUCK, ET AL., 1962). TO DET. C, H, OR S THE COMPDS. WERE BURNED IN AN O BOMB, A FLASK, OR DIRECTLY IN THE SPECTROPHOTOMETRIC GAS CELL PROVIDED WITH A PT COIL. THE PRODUCTS OF THE PYROLYSIS OF THE COMPDS. IN AN INERT GAS ATM. (AR) WERE: CO, CO SUB2, H SUB2 O, AND CH SUB4. THE CONTENT OF O WAS DETD. FROM THE ABSORPTION BANDS OF THE CO SUB2 (2349 CM PRIME NEGATIVE1), CO (2145 CM PRIME NEGATIVE1), AND H SUB2 O (3650-3755 CM PRIME NEGATIVE1). THE METHOD WAS USED FOR 9 COMPDS. THE ERROR OF THE DETN. WAS: C, PLUS OR MINUS 0.49PERCENT; H, PLUS OR MINUS 0.2PERCENT, S, PLUS OR MINUS 0.35PERCENT; AND O, PLUS OR MINUS 0.8PERCENT.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--WAYS OF ELIMINATION OF POROSITY IN WELDING THE AMG6 ALLOY IN DIFFERENT SPATIAL POSITIONS -U-

AUTHOR-(02)-OBTUROV, V.I., YEROKHIN, A.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO 1, 70, PP 17-18

DATE PUBLISHED--------70

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

TOPIC TAGS--ALUMINUM ALLOY, BIBLIOGRAPHY, WELD JOINT POROSITY, POROUS METAL, ALLOY DESIGNATION/(U)AMG6 ALUMINUM MAGNESIUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/2043 STEP NO--UR/0135/70/000/001/0017/0018

CIRC ACCESSION NO--AP0118997

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 019

CIRC ACCESSION NO--AP0118997

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATIONAL DATA QUOTED IN THIS ARTICLE SHOWED THAT SPATIAL POSITION OF THE WELDED PARTS EXERTS AN INFLUENCE ON THE POROSITY OF JOINTS IN THE WELDING OF THE AMG6 ALLOY.

UNCLASSIFIED

UNCLASSIFIED

1/2 021 PROCESSING DATE--27NOV70

TITLE--FISSION CROSS SECTIONS AND FISSION FRAGMENT DISTRIBUTION DURING THE BOMBARDMENT OF LIGHT NUCLEI BY NEON 20 IONS -U-

AUTHOR-(04)-OBUKHOV, A.I., PERFILOV, N.A., SHIGAYEV, O.E., TKACHENKO, YE.G.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(5), 977-81

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FISSION CROSS SECTION, LIGHT NUCLEUS, NEON ISOTOPE, ION BOMBARDMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0367/70/011/005/0977/0981

PROXY REEL/FRAME--3008/0580

CIRC ACCESSION NO--AP0137665

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 021

CIRC ACCESSION NO--AP0137665

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FISSION OF NUCLEI PRODUCED FROM BOMBARDMENT OF SN AND AG TARGETS BY PRIME20 NE IONS WITH ENERGIES 198, 183, AND 168 MEV WAS STUDIED. FOR THE DETECTION OF THE FISSION FRAGMENTS NARROW GLASS GLATES WERE USED. THE FRAGMENTS IMPINGING ON THE PLATES AT AN ANGLE OF 90DEGREES LEAVE TRACKS. THE FISSION CROSS SECTIONS FOR THE LIGHT NUCLEI PRODUCED AT BOMBARDMENT OF SN AND AG TARGETS BY THE PRIME20 NE IONS WITH ENERGY ABOUT 200 MEV WERE CONSIDERABLY HIGHER (BY 2-3 ORDERS OF MAGNITUDE) THAN THE FISSION CROSS SECTIONS FOR THE SAME NUCLEI AT BOMBARDMENT BY P WITH NEAR ENERGIES.

UNCLASSIFIED