

2/2 012

CIRC ACCESSION NO--AP0126254

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF EXPERIMENTAL ALLERGIC ENCEPHALOMYELITIS IN DOGS WAS ACCOMPANIED BY REDUCTION OF CONTENT OF SULFHYDRYL GROUPS IN THE WATER SOLUBLE PROTEINS OF THE CORTEX AND OF THE WHITE MATTER OF THE GREAT HEMISPHERES. WARMING OF THE EXTRACTS OF WATER SOLUBLE PROTEINS AT 40DEGREESC FOR 20 MINUTES CAUSED AN INCREASE IN THE AMOUNT OF SULFHYDRYL GROUPS IN THE PROTEINS OF THE BRAIN OF CONTROL ANIMALS, AND A FALL IN THEIR CONTENT IN THE PROTEINS OBTAINED FROM THE BRAIN OF ANIMALS SUFFERING FROM ENECPHALOMYELITIS.

FACILITY: TSENTRAL'NAYA NAUCHNO ISSLED. LABORATORIYA RUSTOVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

TRAPITSYN, N. V.

UDC 543.422:537.523.082

"The Use of High-Voltage Alternating-Current Arc for Analyses of High Concentrations"

V Sb. "VII Ural'sk. Konf. po Spektroskopii, 1971. Vyp. 1" [In the Collection "Seventh Ural Conference on Spectroscopy, 1971. No 1"], Sverdlovsk, 1971, pp 171-173 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.1000 by V.S.K.)

Translation: Results are presented of the use of a high-voltage a-c arc for increasing the accuracy of atomic absorption analysis of elements in a wide range of their concentrations. Analysis methods are developed for powder test samples of molybdenum, lead, and yttrium, and determination of nickel and chromium in 1Kh18N3T steel. The photographing of spectra was carried out on the ISP-28 spectrometer by 0.02-mm aperture width and a three-lens illumination system with a 5-mm intermediate diaphragm. During the analysis of powder test samples, an approximate voltage of 4900 v was supplied onto the arc, the current on the arc was ~1 amp. The measuring errors were determined from ten independent measurements of the composition, for powder test samples they did not exceed 10% on rectilinear sections of graphs. The average arithmetic error of a single determination of nickel lies in the range from 0.9-3.5%, of a

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USSR

TRAPITSYN, N. V., V Sb. "VII Ural'sk. Konf. po Spektroskopii, 1971, Vyp. 1"
single determination of chromium it lies in the range from 0.22-1.95%. Two
illustr., eight biblio. refs.

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1/2 025

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--ADSORPTION LOWERING OF THE STRENGTH OF ALKALI HALIDE CRYSTALS -U-

AUTHOR--(05)--TRASKIN, V.YU., PERTSOV, N.V., SKVORTSOVA, Z.N., SHCHUKIN, YE.O., REBINDER, P.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(4), 876-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ADSORPTION, SILVER CHLORIDE, POTASSIUM CHLORIDE, ZINC CHLORIDE, COPPER CHLORIDE, ALUMINUM CHLORIDE, MECHANICAL PROPERTY, CRYSTAL STRUCTURE, THERMAL EFFECT, IONIC CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3002/1272

STEP NO--UR/0020/70/191/004/0876/0879

CIRC ACCESSION NO--AT0129686

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--ATO128686

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DESTRUCTION OF NA₂CO₃ AND K₂CO₃ SINGLE CRYSTALS AND POLYCRYSTALS IN THE PRESENCE OF MOLTEN SALTS, H₂O, AND SOMEORG. LIQS. WAS STUDIED. THE TEMP. FOR THE TRANSITION FROM BRITTLE TO PLASTIC RUPTURE DURING STRETCHING WAS DETD. IN THE PRESENCE OF AL₂O₃, ZnO, ZnCl₂, AND CuCl₂. IN THE PRESENCE OF THE 1ST 2 COMPS., THE RANGE OF PLASTICITY AND THE STRENGTH OF NA₂CO₃ WAS DECREASED GREATLY, THE EFFECT BEING GREATER FOR AL₂O₃. THE STRENGTH OF POLYCRYSTALS WAS STUDIED DURING STRETCHING IN THE PRESENCE OF AL₂O₃ AND H₂O. THE STRENGTH DECREASES IN THE SAME ORDER AS THE POLARITY. THUS, THE CHANGE IN THE MECH. CHARACTERISTICS OF THE IONIC CRYSTALS DUE TO THE ACTION OF ADSORBED MEDIA IS DETD. BY THE SIMILARITY BETWEEN THE CRYSTAL AND THE MEDIUM. FACILITY: MOSK. GOS. UNIV. IM.

UNCLASSIFIED

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USSR

UDC 532.522.2

AVDUYEVSKIY, V. S., IVANOV, A. V., KARPMAN, I. M., TRASKOVSKIY, V. D., and YUDELOVICH, M. Ya.

"The Structure of Turbulent Underexpanded Jets Discharging Into a Flooded Space and a Concurrent Stream"

Moscow, Izvestiya Akademii Nauk, SSSR, Mekhanika Zhidkosti i Gaza, No 3, 1972, pp 15-29

Abstract: The results of an experimental investigation of the geometric structure of the initial sector of underexpanded jets are presented, and consideration is given to the principal features of flow in the mixing zone on the boundary of a greatly underexpanded jet during a turbulent flow regime along the entire length of the initial sector of the jet. A concurrent supersonic stream exerts an essential qualitative and quantitative influence upon the configuration of the initial sector of underexpanded jets. The most essential feature of a jet in the concurrent stream consists in "degeneration" of the central shock wave at Mach numbers of the concurrent stream $M_\infty > 2$. The transverse and longitudinal dimensions of the initial sector of an underexpanded jet in a concurrent stream with numbers $M_\infty > 1.5-2$ decrease with the increase of M_∞ . The established features of the structure of concurrent jets

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USSR

AVDUYEVSKIY, V. S., et al., Izvestiya Akademii Nauk, SSSR, Mekhanika Zhidkosti i Gaza, No 3, 1972, pp 15-29

make it impossible, in the general case, to substitute the concurrent jet by an equivalent flooded jet. Approximate relationships are presented, which make it possible to take into account the influence of a concurrent stream upon the basic characteristic dimensions of the initial sector of the jet. The characteristic regions of flow in the compressed viscous layer of an underexpanded jet are isolated. The self-similarity of fields of the gas-dynamic parameters is established. Data are presented on the position of the mixing zone in the space, the total-head profiles, the statistical pressure, and the dimensionless excess stagnation temperature in greatly underexpanded jets. 14 figures. 3 tables. 8 references.

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USSR

AVDUYEVSKIY, V. S., IVANOV, A. V., KARPMAN, I. M., TRASKOVSKIY, V. D.,
YUDELOVICH, M. Ya.

"The Flow in a Supersonic Viscous Underexpanded Jet"

Moscow, Mekhanika Zhidkosti i Gaza, No 3, 1970, pp 63-69

Abstract: An experimental investigation is made of the flow at the initial sector of an underexpanded supersonic jet flowing out into the immersed space and the concurrent stream at Mach numbers $M_\infty \leq 10$. The determining effect of viscosity upon the nature of flow in the jet is established. The basic rules governing the flow are defined. In addition, the results of investigation of the basic dimensions of the initial sector of a turbulent underexpanded jet flowing out into the immersed space are set forth in detail.

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Crystals & Semiconductors

USSR

BROUDE, V. L., LEYDERMAN, A. V., and TRATAS, T. G., Institute of Solid State Physics of the Academy of Sciences USSR, Chernogolovka

"Energy Spectrum of Isotopically Mixed Naphthalene Crystals"

Leningrad, Fizika Tverdogo Tela, No 12, Dec 71, pp 3624-3632

Abstract: Data on the absorption spectra of isotopically mixed naphthalene-hg-naphthalene-dg crystals are analyzed. It has been recently established that a fine structure connected with the formation of clusters and complicating analysis of experimental data from the aspect of impurity exciton states is observed in the spectra of isotopically mixed molecular crystals, particularly in the spectra of mixtures of deuterioisotopes of naphthalene. On the other hand, there have been several theoretical studies of similar isotopic mixtures both on the basis of a simplified model picture or specific ordered distribution of the impurity, and on the basis of a calculation using Green's functions. This complicated situation required a detailed analysis of experimental and theoretical data in order to make a reasonable comparison between them, and an attempt is made to do this in this article. The isotopically mixed molecular single crystal, the mixture of naphthalene-hg and naphthalene-dg, is a typical example of an unordered

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USSR

BROUDE, V. L., et al., Fizika Tverdogo Tela, No 12, Dec 71, pp 3624-3632

system. The position of impurity absorption bands in the fine structure is calculated for low concentrations on the basis of the cluster representation. A computer calculation was made using the Green's function method for an ordered system, and these results were compared with a concentration dependence for centers of gravity of the bands that were obtained experimentally. It is emphasized that the results show that the notion of a cluster may have independent geometrical and energy interpretations. The presence of geometric bands shows in the energy spectrum only for sufficiently rapidly attenuating interactions between molecules. The naphthalene crystal for which the lowest exciton zones are characterized by short-acting interactions is a good example of this. The presence of similar geometric clusters does not lead to a fine structure of the impurity spectrum in crystals of a different type or of other exciton zones of the naphthalene crystal, where dipole-dipole interactions occur between the molecules, and the presence of such geometrical clusters does not lead to a fine structure of the impurity spectrum. In this case the considerable distance does not make it possible to select independent cluster groups at average concentrations, there occurs a covering of regions of elementary excitation, and the corresponding optical

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USSR

BROUDE, V. L., et al., Fizika Tverdogo Tela, No 12, Dec 71, pp 3624-3632

spectrum is close to the spectrum calculated by the Green's function method. It is only at low concentrations that an additional fine structure in the spectrum is expected in this case. It is noted that the use of more complex samples will lead to more detailed and precise experimental data.

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1/2 030
UNCLASSIFIED
TITLE--THE POSSIBILITY OF USING GAUSSIAN APPROXIMATION IN EVALUATING
JAMMING INVULNERABILITY OF RECEPTION -U-
AUTHOR--(02)--MOROZOV, A.K., TRATAS, YU.G. PROCESSING DATE--13NOV70
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, RADIOTEKHNIKA, NO 1, 1970, PP 25-29
DATE PUBLISHED-----70
SUBJECT AREAS--NAVIGATION, MATHEMATICAL SCIENCES
TOPIC TAGS--GAUSSIAN DISTRIBUTION, COMMUNICATION JAMMING, INTERFERENCE
IMMUNITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1359
CIRC ACCESSION NO--AP0123317
STEP NO--UR/0108/70/000/001/0025/0029
UNCLASSIFIED

030
CIRC ACCESSION NO--AP0123317
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

OF GAUSSIAN APPROXIMATION IN EVALUATING THE RECEPTION JAMMING
INVULNERABILITY OF BINARY SIGNALS BY RECEIVERS WITH NONLINEAR ELEMENTS.
THE ORIGINAL ARTICLE HAS TWO ILLUSTRATIONS AND TWO BIBLIOGRAPHIC
ENTRIES.

UNCLASSIFIED

USSR

UDC 612.821.6+616.831.311

KAYDANOVA, S. I., MEYERSON, Ya. A. and TRAUOGOTT, N. M., Institute of Evolutionary Physiology and Biochemistry, USSR Academy of Sciences and Psychoneurological Institute imeni V. M. Bekhterev, Leningrad

"On the Role of the Parietal Area of the Human Brain in the Analysis and Synthesis of Complex Stimuli"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 4, Jul/Aug 73, pp 697-703

Abstract: Conditioned reflexes requiring differentiation of simultaneous and successive complex signals, acoustic, visual and positional, were elaborated in patients with local lesions of the parietal lobes, and compared to identical reflexes previously elaborated in patients with extraparietal lesions of the brain. The experimental subjects had more difficulty in differentiating both successive and simultaneous stimuli, in that more repetitions were required to establish the reflex, and in some cases it could not be formed. Signals of differing modes were more easily distinguished than those of one mode. Successive analysis was more affected than

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USSR

KAYDANOVA, S. I., et al., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 4, Jul/Aug 73, pp 697-703

simultaneous, especially for acoustic signals. Auditory stimuli were less effective than visual for successive analysis, while the reverse was true for simultaneous analysis. Lesions of the left parietal lobe resulted in more severe disturbances of both kinds of analysis, which was said to reflect the significance of speech in the analysis of complex signals. However lesions of the right lobe affected predominantly visual analysis, which is said to suggest that the analysis of visual non-speech signals is achieved predominantly by the right hemisphere. Those patients who showed the greatest disturbance of higher cortical functions also showed the most disturbed analysis. These results are also considered to show that the analysis of complex signals resides in the parietal region.

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1/3 027

UNCLASSIFIED

PROCESSING DATE--17NOV70

TITLE--ON THE RELATIONSHIP BETWEEN THE CEREBRAL CORTEX AND DEEP BRAIN
STRUCTURES IN THE COURSE OF PERFORMING SOME MENTAL PROCESSES -U-

AUTHOR--TRAUGOTT, N.N.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 1, 1970,
PAGES 43-49

DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, BIOLOGICAL AND MEDICAL
SCIENCES

TOPIC TAGS--CEREBRAL-CORTEX, PSYCHOPHYSIOLOGY, NEUROPHYSIOLOGY,
CONDITIONED REFLEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3003/0945

STEP NO--UR/0248/70/025/001/0043/0049

CIRC ACCESSION NO--AP0130010

UNCLASSIFIED

2/3 027

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--APO130010
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AT THE PRESENT STAGE OF DEVELOPMENT OF SCIENCE THE QUESTION OF BOUNDARY BETWEEN PHYSIOLOGY OF HIGHER NERVOUS ACTIVITY AND PSYCHOLOGY IS ACQUIRING AN ALMOST SCHOLASTIC NATURE. WHILE THE PURPOSE OF NEUROPHYSIOLOGICAL RESEARCH IS TO INVESTIGATE THE MECHANISMS OF THE BRAIN THAT DETERMINE BEHAVIOR, THIS IS ALSO THE AIM OF PSYCHOLOGY, OR AT ANY RATE OF THOSE OF ITS BRANCHES THAT ARE CALLED NEUROPSYCHOLOGY OR PSYCHOPHYSIOLOGY. THE OBSTACLE TO APPROXIMATION OF PHYSIOLOGY OF HIGHER NERVOUS ACTIVITY AND PSYCHOLOGY IS, IN THE OPINION OF A NUMBER OF PHYSIOLOGISTS, THE FACT THAT PSYCHOLOGY DEALS WITH CONCEPTS THE NEUROPHYSIOLOGICAL SUBSTRATE OF WHICH WAS NOT ANALYZED, CONCEPTS DEVELOPED AT A TIME WHEN PHYSIOLOGY OF THE CEREBRAL HEMISPHERES DID NOT YET EXIST. PSYCHOLOGY CANNOT REJECT THESE CONCEPTS, SINCE INEVITABLY COMPLEX FORMS OF MENTAL ACTIVITY, COMPLEX FORMS OF BEHAVIOR ARE WITHIN ITS JURISDICTION, AND THEIR PHYSIOLOGICAL MECHANISMS CANNOT YET BE COMPLETELY ANALYZED. IT DOES NOT FOLLOW, HOWEVER, THAT PHYSIOLOGY OF HIGHER NERVOUS ACTIVITY SHOULD NOT STRIVE TO SEEK WAYS AND MEANS OF ANALYZING THEM. IN OTHER WORDS, IN MY OPINION, PSYCHOLOGY AND NEUROPHYSIOLOGY SHOULD GO TOWARD ONE ANOTHER IN LEARNING ABOUT COMPLEX FORMS OF BEHAVIOR. THAT SUCH A MOVEMENT TOWARD ONE ANOTHER IS POSSIBLE AND FRUITFUL IS INDICATED BY THE ENTIRE COURSE OF DEVELOPMENT OF BOTH SCIENCES IN THE LAST FEW DECADES. AMONG THE PROBLEMS OF EQUAL CONCERN TO PSYCHOLOGISTS AND PHYSIOLOGISTS DEALING WITH HIGHER NERVOUS ACTIVITY ARE THOSE PERTAINING TO MECHANISMS OF MEMORY, EMOTIONS AND CONSCIOUSNESS.

UNCLASSIFIED

CIRC ACCESSION NO--AP0130010

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT-- IN PARTICULAR, OF GREAT INTEREST TO BOTH SCIENCES IS
 DETERMINATION OF THE ROLE OF DEEP STRUCTURES OF THE BRAIN IN PERFORMING
 THESE FUNCTIONS. THE NEED TO INVESTIGATE CORTICO SUBCORTICAL
 CORRELATIONS IN DYNAMICS OF CONDITIONED REFLEX ACTIVITY WAS STRESSED BY
 I. P. PAVLOV, L. A. ORBELI, AND A. G. IVANOV-SMOLENSKIY. IN THIS
 ARTICLE WE SHOULD LIKE TO REPORT, FOR THE SAKE OF PRELIMINARY
 DISCUSSION, SOME OF THE DATA ON THESE ISSUES OBTAINED IN OUR LABORATORY
 FROM A STUDY OF THE EFFECT OF DIFFERENT DRUGS THAT HAVE A MARKED
 INFLUENCE ON BEHAVIOR. WE BELIEVE, THAT IT WOULD BE THE MOST USEFUL TO
 ANALYZE THE CORRELATIONS BETWEEN PSYCHOLOGY AND NEUROPHYSIOLOGY ON THE
 BASIS OF CONCRETE FINDINGS. FACILITY: INSTITUTE OF EVOLUTIONAL
 PHYSIOLOGY AND BIOCHEMISTRY, USSR ACADEMY OF SCIENCES, LENINGRAD.

UNCLASSIFIED

USSR

UDC 582.232-119:576.8

KVASNIKOV, Ye. I., STOGNIY, I. P., TRAVCHUK, T. P., SHCHELOKOVA, I. F.,
KLYUSHNIKOVA, T. M., and GRINBERG, T. A., Institute of Microbiology and
Virology, Academy of Sciences Ukrainian SSR, Kiev

"Blue-Green Algae From the Kremenchug Reservoir as a Raw Material for
Growing Microorganisms"

Kiev, Gidrobiologicheskii Zhurnal, Vol 7, No 6, Nov/Dec 71, pp 80-83

Abstract: Blue-green algae of the Kremenchug reservoir contain a considerable amount of polysaccharides both easy and difficult to hydrolyze, including easily accessible ones for assimilating glucose, mannose, galactose, and xylose. They are also rich in protein substances which can, upon hydrolysis, be converted into amino acids and used in the process of growing microorganisms. Algae contain a sufficient amount of ash elements, but they are poor in phosphorus. Blue-green algae contain a large selection of B-group vitamins. These algae contain all the components necessary for the development of heterotrophic microorganisms used in the brewing and food industry. The necessary number of components can be balanced.

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USSR

UDC 669.184.244.66

TRAVIN, O. V., ZIN'KO, B. F., SHUMOV, M. M., ISAYEV, V. A.,
ZHUKAYEV, G. M., and SOBKIN, S. I.

"Kinetic Specifics of the Process of Deoxidation During Production of Low-Carbon Rimming Steel"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 93-100

Translation: The mass transfer conditions between slag and metal in the process of deoxidation of low-carbon rimming steel in the ladle are studied. It is established that during the process of deoxidation the loss of manganese is determined by both the thermodynamic and the kinetic conditions. The influence of the pouring time, slag viscosity, moment of addition of deoxidizers, and other kinetic parameters on manganese loss is determined. An equation is presented, allowing the manganese loss to be determined in advance on the basis of known parameters of the converter process, notch condition and other factors. 4 figures.

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USSR

UDC 669.184.244.66

ZIN'KO, B. P., TRAVIN, O. V., SHIMOV, M. M., ISAYEV, V. A., and
ZHUKAYEV, G. M.

"State of the Oxidation of Low-Carbon Converter Steel"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of
Works], No 75, Metallurgiya Press, 1970, pp 100-104

Translation: In connection with the requirements for performance of more precise deoxidation, the thermodynamic and kinetic factors determining the level of oxidation of metal in a converter are analyzed. On the basis of diffusion concepts, an equation is derived allowing the actual content of oxygen in the bath to be determined on the basis of known parameters: content of carbon in the metal, concentration of ferrous oxide in the slag, and metal temperature. 3 figures; 3 biblio. refs.

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1/2 014

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--EFFECT OF DECARBURIZATION ON THE RATE OF SULFUR AND PHOSPHORUS
REMOVAL FROM IRON AND CARBON MELTS BY SOLID SLAGS -U-

AUTHOR--(03)-TRAVIN, D.V., PEREVALOV, N.N., ZHURAVLEV, V.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1) 204-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CAST IRON, DESULFURIZATION, PHOSPHORUS, SLAG, METAL MELTING,
ALUMINA, LIME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1983/0942

CIRC ACCESSION NO--AP0053866

STEP NO--UR/0076/70/044/001/0204/0207

UNCLASSIFIED

2/2 014

CIRC ACCESSION NO--AP0053866

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF OXIDIZING PROCESSES ON THE RATE OF S AND P REMOVAL FROM THE CAST IRON MELTS BY ALUMINA AND FERRO LIME SLAGS IS INVESTIGATED. ADDNS. OF ORES TO THE MELTS IMPEDE DESULFURIZATION, BUT HAVE NO EFFECT ON DEPHOSPHORIZATION PROCESSES.

UNCLASSIFIED

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UDC 536.4.015L669.018.2

TRAVINA, N. T., TYAPKIN, YU. D., NIKITIN, A. A., and KOZLOV, V. P., Institute of Metal Science and Physics of Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"The Influence on Mechanical Properties of the Spatial Distribution of Second-Phase Separations in Nickel-Base Aging Alloys "

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 803-807

Abstract: A study was made of the effect of spatial distribution of second-phase separations on the characteristics of strength and plasticity of single crystals of aging alloys of the following compositions: Ni - 14.0 at%Al, Ni - 16.5 at%Al, and Ni - 19.0 at%Al. From the stress-strain diagram plotted from tensile tests of flat specimens made at a rate of $2.5 \cdot 10^{-3}$ sec⁻¹ calculations were made of the curves "reduced shear stress τ_r - reduced shearing strain ϵ_r " for the $\{111\} \langle 110 \rangle$ slip system. The measured mechanical characteristics (critical shearing stress τ_s , strain hardening factor θ_n , maximum shearing strain ϵ_s) are compared with parameters η which characterize the correctness of the spatial distribution of β -phase particles. It was found that the plasticity of the investigated alloys improves with growing η , not only without decrease in strength, but even at some increase in strength. The importance, from the viewpoint of practical use, of the effect of the

USSR

TRAVINA, N. T., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 4,
Oct 73, pp 803-807

correct spatial distribution of 2nd phase particles for the improvement of the
plasticity of alloys at simultaneous increase in strength is emphasized.
Two figures, one table, nine bibliographic references.

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Superalloys

USSR

UDC 539.27

TYAPKIN, YU. D., TRAVINA, N.T., and KOZLOV, V. P., Institute of Metal Science and Physics of Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Electron Microscopic Study of Space Distribution Parameters of the Second-Phase Precipitates in Aging Nickel-Based Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 3, 1973, pp 577-583

Abstract: The thin-film electron microscopy method suggested in this work for the study of ordering and distribution of precipitates is based on the statistical treatment of the electron microscope images. Single crystals of two-phase Ni - Al alloys with different volumetric precipitation (from 20 to 60 volumetric percent) of the type Ni₃Al γ' phase were used. The density numbers of γ' precipitates along $[100]$, $[110]$, and $[230]$ directions are given on histograms plotted on the basis of electron microscope images. Precipitates of Ni - Al alloys were distributed among nodes of a simple cubic macrolattice with $[100]$ axes. The order of this distribution depended on many factors. The size of the precipitated γ' phase was 110-120 Å for the alloy containing 14 at% Al and aged at 700°C for 5 hours. It increased to 140-160 Å for the same alloy aged at 750°C for 1 hour. For the alloy containing 16.5 at% Al the size of

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USSR

TYAPKIN, YU. D., et al, Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35,
No 3, 1973, pp 577-583

the precipitated γ' phase was 180-200 Å after aging at 750°C for 1 hour, and
it increased to 200-220 Å for the alloy containing 19 at% Al and aged at 750°C
for 30 min. The three alloys contained 20, 40, and 60 volumetric percent of
the γ' phase, respectively.

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USSR

UDC 539.37:539.412

TRAVINA, N. T., and NIKITIN, A. A., Institute of Metal Studies and Physics of Metals; Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Deformation of Single Crystals of Nickel-Aluminum Solid Solutions. I. Temperature and Concentrational Dependences of Critical Shearing Stresses"

Sverdlovsk. Fizika Metallov i Metallovedeniye, Vol 31, No 6, Jun 71, pp 1267-1271

Abstract : The effects of aluminum concentration, investigation temperature, and orientation of the axis of stretching of specimens of solid solutions of Ni - Al with 4.0 and 8.0 at. wt. % of Al on the values of critical shearing stresses and the characteristics of strain hardening of monocrystals were investigated in the temperature interval of -196 to +400 °C . The physical nature of obstacles hindering the motion of dislocations is discussed. Derived experimental data are analyzed by reference to diagrams and in conformity with modern dislocation theories. The analysis shows that activation energies and activation volumes of the solid solution of Ni - Al with 8.0 at. wt. % of Al actually can be combined with processes of developing steps on dislocations. Three illustr., one table, 11 biblio. refs.

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USSR

Single Crystals

UDC 539.37:539.412

TRAVINA, N. T., and NIKITIN, A. A., Institute of Metal Studies and Physics of Metals; Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Deformation of Single Crystals of Nickel-Aluminum Solid Solutions. 2. Strain Hardening"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 6, Jun 71, pp 1272 -1280

Abstract: In continuation of the first part of this article (Ibid., Vol 31, No 6, Jun 71, pp 1267 -1271) on the effect of the concentration of the alloying component, the orientation of the axis of stretching, and the temperature of investigations on the character of critical shearing stresses, the effects of these factors on the character of the stress-strain curves and the characteristics of strain hardening of solid solutions of Ni - Al with 4.0 and 8.0 at. wt. % of Al were investigated. The character of the stress-strain curves of monocrystalline solid solutions is generally analogous to curves of pure metals with face-centered cubic lattice, showing the three stages of light sliding, linear hardening, and dynamic rest. However, the presence of the alloying

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USSR

TRAVINA, N. T., et al, Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 6, Jun 71, pp 1272-1280

element substantially affects the extent of these stages and their characterizing strain hardening factors. Experimentally derived strain hardening characteristics of Ni - Al solid solutions with 4 and 8 at. wt. % of Al tested at various temperatures and the changing lengths of tested specimens and the shearing stresses during deformation are discussed by reference to tabulated data and strain hardening curves. Six illustr., three tables, 14 biblio. refs.

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UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ELECTROCHEMICAL REDUCTION OF OXYGEN ON OXIDE SEMICONDUCTOR MATERIALS. HETEROGENEITY OF CHEMISORBED OXYGEN ON ELECTRODES OF NICKEL

AUTHOR--(021)-SAVIN, V.S., TRAVINA, G.YA.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKIMIYA 1970, 6(3), 420-2

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROCHEMICAL REDUCTION, SEMICONDUCTOR MATERIAL, NICKEL, METAL ELECTRODE, CRYSTAL LATTICE STRUCTURE, CHEMICAL BONDING, ELECTRODE POTENTIAL, LITHIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/1143

STEP NO--UR/0364/70/006/003/0420/0422

CIRC ACCESSION NO--AP0121702

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--A0121702

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

ABSTRACT. SAMPLES CONTG. 1, 20, AND 30PERCENT ATOM LI WERE TESTED. CURVES OF THE CURRENT VS. TIME WERE RECORDED AT 25DEGREES IN N SUB2 ATM. IN A 30PERCENT KOH SOLN. THE SP. SURFACE OF THE ELECTRODES USED WAS 0.6 M PRIME2-G. THE AMT. OF CHEMISORBED O INCREASED WITH INCREASE IN LI CONC. FOR ALL THE SAMPLES THE MAX. OF THE CURVES OF POTENTIAL VS. CHARGE NEEDED FOR O REDN. WAS AT 0.90 PLUS OR MINUS 0.02 V. FOR A SIMILAR LI CONTENT, THE AMT. OF CHEMISORBED O DEPENDED ON THE HISTORY OF THE ELECTRODE. FOR A FRESHLY PREPD. ELECTRODE THE AMT. OF O WAS HIGHER, AND SO WAS THE INITIAL POTENTIAL OF THE ELECTRODE. FOR CATHODIC POTENTIALS PLUS 0.75 V AND ABOVE, THE AMT. OF O REMOVED FROM ELECTRODES INCREASES; THIS IS PROBABLY CONDITIONED BY THE START OF THE REDN. OF O STRONGLY BOUND IN THE CRYST. LATTICE.

FACILITY: NAUCH.-ISSLED. FIZ.-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

040

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--EFFECT OF HARDENING PHASE REGION DIMENSIONS AND DISTRIBUTION ON
CRITICAL STRESSES IN NICKEL ALUMINUM AND NIMONIC ALLOYS -U-

AUTHOR--(C2)--TRAVINA, N.T., NOSOVA, G.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METALMETALLOVED. 1970, 29(3), 564-8

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--NIMONIC ALLOY, METAL SINGLE CRYSTAL, METALLURGIC RESEARCH
FACILITY, NICKEL ALLOY, ALUMINUM CONTAINING ALLOY, CRYSTAL DISLOCATION,
SHEAR STRESS, METAL HARDENING, ALLOY PHASE TRANSFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0335

STEP NO--UR/0126/70/029/003/0564/0568

CIRC ACCESSION NO--AP0126091

UNCLASSIFIED

2/2 040

CIRC ACCESSION NO--AP0126091
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. SINGLE CRYSTALS OF NI,AL (12.5, 14.0, AND 19.0 AT. PERCENT AL) AND NIMONIC ALLOY (CR 20.6, TI 3.2, AND AL 1.6 AT. PERCENT), WERE STUDIED AS TO THE TITLE EFFECT IN WHICH THE GAMMA PRIME PHASE WAS THE HARDENING PHASE. AFTER AN INITIAL SHARP INCREASE IN SHEAR STRESS TAU SUBS CHANGES DURING THE DECOMP. IN AGING, TAU SUBS WAS CONST. IN A FAIRLY WIDE RANGE OF SIZES OF THE HARDENING PHASE FORMATIONS; E.G. IN NI,AL ALLOYS THE HARDENING PHASE FORMATIONS INCREASED FROM 160 TO 500-600 ANGSTROM, AND IN THE NIMONIC ALLOY FROM 220-40 TO 800 ANGSTROM, WHILE THE VALUES OF TAU SUBS REMAINED CONST. THESE EFFECTS ARE EXPLAINED BY MOVEMENT OF PAIRED DISLOCATIONS AS FOLLOWS: DURING THE INITIAL STAGES OF DECOMP., DURING AGING NOT ONLY THE SIZE OF FORMATIONS BUT ALSO THEIR VOL. FRACTION AND DEGREE OF ORDERING UNDERGO CHANGES. AS THE RESULT, THE TOTAL LENGTH OF THE ANTIPHASIC BOUNDARIES AND THEIR ENERGY INCREASED SHARPLY, AS DID THE RESISTANCE TO DISLOCATION MOVEMENT AND THE TAU SUBS. DURING SUBSEQUENT AGING FOR 2-3 HR AT 750DEGREES, THE ENERGY OF THE ANTIPHASIC BOUNDARIES REACHED EQUIL. VALUES, AND WITH FURTHER AGING THE TOTAL LENGTH OF THE ANTIPHASIC BOUNDARIES ALONG DISLOCATION LINES AND THEIR WIDTH DID NOT CHANGE, THUS THE TAU SUBS WERE CONST. IN FAIRLY WIDE RANGES OF SIZE CHANGES OF GAMMA PRIME PHASE FORMATIONS.

FACILITY: TSNIICHM IM.
BARDINA, MOSCOW, U.S.S.R.

UNCLASSIFIED

USSR

JDC 669.24:339.37/36

NOSOVA, G. I., and TRAVINA, N. T., Central Scientific Research Institute of Ferrous Metallurgy (Imeni I. P. Bardin (TsNIIChM)

"The Effect of Structural Characteristics on Strain Hardening of Single Crystals of Nickel Base Alloys at Room Temperature"

Sverdlovsk, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol. 20, No 1, Jul 70, pp 150-156

Abstract: An experimental investigation was made of the effect of the grade and volume of separations of the γ' -phase on various aging stages and of the effect of crystallographic orientation of single crystals relative to the elongation axis on the strain-hardening characteristics. The length of the various stages of the strain-hardening curve and the pertinent hardening factors were determined. Structural and strain-hardening characteristics were specified for Ni-Cr alloys with 10-15 at% of Al and the Nimonic alloy (22.5 at% Cr; 3.2 at% Ti; 1.0 at% Al; the rest Ni). Some suggestions on the mechanism of the processes in various stages of strain hardening can be made on the basis of an analogy of the investigated alloys with pure metals.

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#0046700

Abstracting Service: S/O
INTERNAT. AEROSPACE ABST.

Ref. Code:
UR 0185

A70-23195 # Effect of ordering in the structure of the gamma prime-phase on the critical shear stresses of aging nickel-base alloys (Vpliv uporiadkuvannia u strukturi fazi vidilennia na kritichni skoliuuchi napruzhenia stariuchikh splaviv na nikel'ovii osnovi. N. T. Travina and G. I. Nosova (Tsentral'nyi Nauchno-Issledovatel'skii Institut Chernoi Metallurgii, Moscow, USSR). *Ukrains'kii Fizicheskii Zhurnal*, vol. 15, Jan. 1970, p. 129-131. 6 refs. In Ukrainian.)

Summary of experimental data on the effect of a gamma prime-phase with an ordered structure of Ni3Al type on the critical shear stresses of single crystals of aging Ni-Al alloys and nickel. In conformity with various dislocation models of aging alloy strengthening, the theoretical estimates are made of the critical shear stresses for different structural states of the investigated alloys. On the basis of the experimentally measured and calculated values of the critical shear stresses it is concluded that the energy and length of the antiphase boundaries arising as a result of crossing by dislocations of gamma prime-phase ordered precipitates plays a decisive role in the strengthening of these alloys.

(Author)

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REEL/FRAME
19782016

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USSR

TRAVKIN, M. P., Belgorod State Pedagogical Institute imeni M. S. Ol'minskiy
"Change in Bioelectric Activity of *Setcreasea purpurea* in Response to Constant
and Pulsating Magnetic Fields"

Moscow, Biofizika, Vol 18, Vyp 1, 1973, pp 172-174

Abstract: *Setcreasea purpurea* plants were grown either in constant 1,250 oersted electromagnetic fields for 3 weeks or treated intermittently for 1 week with a pulsating 30 oersted field, and then subjected to weak fields (0.5 and 1.73 oersted) to determine the effects of such fields on bioelectric potential (BEP). Both variants differed greatly from controls, in which the BEP increased somewhat in response to 1.73 oersted and then decreased in a 0.5 oersted magnetic field. In the first variant the BEP increased somewhat at 1.73 oersted, decreased sharply when the magnetic field was switched to 0.5 oersted, and then increased to 50% of the initial value after 20 min. In the second variant the BEP dropped sharply 5-7 min after the 1.73 oersted field was switched on and then increased at 0.5 oersted. The effects typically lasted for several days and may be irreversible. Thus changes in BEP in

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USSR

TRAVKIN, M. P., Biofizika, Vol 18, Vyp 1, 1973, pp 172-174

response to the two types of fields differ. It is suggested that such fields make cell membranes more labile in regard to weak magnetic fields.

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USSR

UDC 546.257'6+620.181

TRAYKIN, N. N., GRIBOV, B. G., RUMYANTSEVA, V. P., KOZYRKIN, B. I., and SALAMATIN, B. A.

"A Thermographic Study of Organometallic Compounds. I. Thermal Dissociation of Bis-Arene Compounds of Chromium"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2677-2679

Abstract: Bis-Arene π -complexes of chromium are a prominent and increasingly important source of pure chromium, low-resistance film-type resistors, and other products; but the decomposition of these compounds has not been thoroughly studied, and this impedes their effective utilization.

Heat resistance of several of these compounds was determined experimentally; they can be arranged in the following order of increasing resistance: $(C_6H_6)_2Cr < (CH_3C_6H_5)_2Cr < (C_2H_5C_6H_5)Cr < [(CH_3)_3C_6H_3]_2Cr$. It was shown in addition that decomposition of bis-Arene chromium compounds proceeds according to the general formula $(Ar)_2Cr \rightarrow 2Ar + Cr$.

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USSR

Thin Films

UDC 547.1'13 + 621.793.1

GRIBOV, B. G., RUMYANTSEVA, V. P., TRAVKIN, N. N., PASHINKIN, A. S.,
KOZYRKIN, B. I., and SALAMATIN, B. A.

"Study of Metallic Films Obtained by Pyrolysis of Chromium and Molybdenum π -Complexes in the Gas Phase"

Moscow, Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 580-582

Abstract: The article describes results of a study of the properties of metallic chromium and molybdenum films obtained by the pyrolysis of organic chromium and molybdenum compounds. The organometallics used were bis-benzene-, bis-toluene-, bis-ethylbenzene-, bis-xylene-, bis-mesitylene-, bis-diphenylchromium, their iodides, aniline-, dimethyl-aniline- and mesitylenechromium tricarbonyl, mesitylenemolybdenum tri-carbonyl and bis-ethyl-benzenemolybdenum. The resultant metallic films possess considerable mechanical strength and hardness, elevated corrosion and acid resistance, and high adhesion. In order to study the properties of the pyrolytic chromium and molybdenum films, electro-

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USSR

GRIBOV, B. G., et al., Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 580-582

physical parameters were measured and the structure and properties of the films determined by the electron diffraction method and electron microscopy. The results indicate that a number of peculiarities in metallic films obtained by the pyrolysis of organometallics are explained by the character of their formation during thermal decomposition, and their composition and properties depend on the conditions under which the thermal decomposition is carried out, as well as on the initial organometallics.

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USSR

UDC 546.719-386:542.61

BOL'SHAKOV, K. A., Corresponding Member Academy of Sciences USSR; SINITSYN, N. M., ~~TRAVKIN V. R.~~, and ANTIMONOVA, L. N., Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov, Moscow

"A Study of the Interaction of Hexahalorhenates (IV) with tri-n-Butylphosphine Oxide in Extraction Processes"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 3, 1971, pp 614-617

Abstract: The extraction with Bu_3PO in CCl_4 of $ReCl_6^{2-}$ and $ReBr_6^{2-}$ from 0.002 M solutions of $(NH_4)_2ReCl_6$ and $(NH_4)_2ReBr_6$ in HCl was studied at equal volumes of the aqueous and organic phase. The maximum degree of extraction was at an HCl concentration of 3.4 M. With increasing concentrations of Bu_3PO in CCl_4 from 0.01 to 0.05 M, the coefficient D_{Re} of the distribution of Re between the organic and aqueous phase at 1 M HCl increased from 1.5 to 150. This indicated that more than 99% of the Re could be extracted in one operation. D_{Re} was higher for the Br than Cl complex. In the extraction of the Cl complex, the composition of the compound extracted was $(Bu_3PO)_3(H_2O)_2ReBr_6$ (II) were synthesized. I and II, a light-green and yellow-brown compound, respectively, dissolved easily in polar organic solvents (alcohols,

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USSR

BOL'SHAKOV, K. A., et al, Doklady Akademii Nauk SSSR, Vol 198, No 3, 1971, pp 614-617

acetone, HCCl_3) and loss readily in non-polar solvents (benzene, hexane, CCl_4). These compounds were stable in the air up to $230-40^\circ$. The molar electric conductivity of I and II in solutions of various concentrations in MeOH, EtOH, and BuOH was determined. It increased in the order $\text{BuOH} < \text{EtOH} < \text{MeOH}$, but there was no complete dissociation into three solvated ions even in MeOH. Solutions of I in benzene did not conduct. The electronic spectra of I and II corresponded to those of the organic phases obtained on extraction of the ammonium hexahalorhenates with $\text{Bu}_3\text{PO} + \text{HCCl}_3$. In the IR spectra of I and II, the absorption band of valency oscillations of $\text{P}=\text{O}$ was displaced towards longer wavelengths vs. that for Bu_3PO because of a redistribution of electron density associated with the formation of the coordination compounds. The results obtained and data from the literature indicated that the following equilibrium is established during the extraction:

$$3 \text{Bu}_3\text{PO}_{\text{org}} + (\text{NH}_4)_2/\text{ReHal}_6/\text{aq} + 2\text{HCl}_{\text{aq}} + (x+2)\text{H}_2\text{O} \rightleftharpoons \{ (\text{Bu}_3\text{PO})_3 \cdot (\text{H}_2\text{O})_2(\text{H}_2\text{O})_x \cdot / \text{ReHal}_6 / \}_{\text{org}} + 2\text{NH}_4\text{Cl}$$

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UNCLASSIFIED

COOLING CONDITIONS -U- IN THE STRUCTURE OF COPPER NICKEL CONVERTER MATTES WITH
AUTHOR--(02)--MASLENITSKY, I.N., TRAVNICHEK, M.N.

PROCESSING DATE--30OCT70

COUNTRY OF INFO--USSR

SOURCE--IZVEST. V.U.Z., TSVEYNAYA MET., 1970, (1), 31-34

DATE PUBLISHED--70

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

TOPIC TAGS--SULFIDE MATTE, COPPER, NICKEL, SMELTING FURANCE, ORE
BENEFICIATION, EXTRACTIVE METALLURGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1550

CIRC ACCESSION NO--AP0125176

STEP NO--UR/0149/70/050/001/0031/0034

UNCLASSIFIED

ACCESSION NO--AP0125176

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF COOLING CONDITIONS ON THE STRUCTURE OF CU-NI CONVERTER MATTES WAS STUDIED. INCREASING THE PERIOD OF COOLING CAUSED THE PRODUCTION OF A COARSER STRUCTURE, REDUCING THE PROPORTION OF SEGREGATION IN THE FINE MATTE. AN OPTIMUM STRUCTURE WAS OBTAINED BY COOLING OVER 6-8 DAYS. ANY SHORTENING OF THIS PERIOD HAD A HARMFUL EFFECT ON QUALITY, THIS EFFECT BEING GREATER FOR THE CU AND THE NI CONCENTRATE.

UNCLASSIFIED

USSR

UDC: None

GROSS, Ye. F. (Deceased), PERMOGOROV, S. A., TRAVNIKOV, V. V., and
SEL'KIN, A. V.

"Kinetics of the Formation of Bonded Excitons in CdS Crystals"

Leningrad, Fizika Tverdogo Tela, vol 14, No 5, 1972, pp 1547-1548

Abstract: This brief communication is the sequel to an earlier article published by the authors named above in the same journal (vol 14, 1972, p 1388), in which they showed that the excitation of CdS crystals with a high probability of nonradiation recombination by monochromatic light creates monokinetic exciton distribution in the exciton zone. In the present communication an account is given of an investigation into the probability of formation of excitons bonded with neutral donors in CdS crystals as a function of the energy of the free excitons. The excitation spectra were obtained at a temperature of 4.2° K with equipment described in the earlier paper, and the results of their plot are shown.

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USSR

UDC 621.84.001.2(088.8)(74)

MACHINSKIY, V. K., KALYUZHNYY, A. D., TRAVNIKOY, Ye. N.
~~TRAVNIKOY, Ye. N.~~

"A Vacuum Tape Transport Mechanism"

USSR Author's Certificate No 282694, filed 25 Aug 69, published 21 Dec 70
(from RZh-Radiotekhnika, No 7, Jul 71, Abstract No TV178 P)

Translation: This Author's Certificate introduces a vacuum tape transport mechanism which contains drive shafts and magnetic heads. As a distinguishing feature of the patent, in order to shorten the time of the transient process when the magnetic tape speed changes, and to reduce the nonuniformity of tape speed, opposite each of the shafts rotating at different speeds is a corresponding module of "floating" magnetic heads. Information at each instant of time is recorded by one of the modules against whose shaft the tape is drawn by a vacuum, while the other module is held away from its shaft by a jet of air blown through it.

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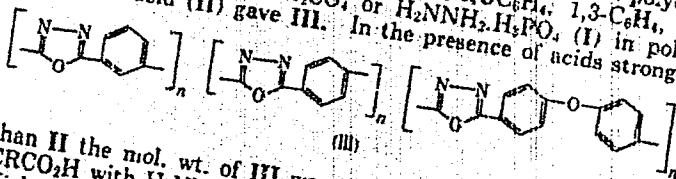
AP0052538

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

UR 04592

101159a Kinetic dependences of polycyclization in polyphosphoric acid. Synthesis of high-molecular-weight poly-1,3,4-oxadiazoles. Krongauz, E. S.; Korshak, V. V.; Virpsha, Z. O.; Travnikova, A. P.; Sheina, V. E.; Lokshin, B. V. (Inst. Elementoorg. ~~Synthesis~~ Moscow, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 135-9 (Russ). The polycondensation-polycyclization of HO₂CRCO₂H (R is 4,4'-C₆H₄OC₆H₄, 1,3-C₆H₄, or 1,4-C₆H₄) with H₂NNH₂·H₂SO₄ or H₂NNH₂·H₃PO₄ (I) in polyphosphoric acid (II) gave III. In the presence of acids stronger



than II the mol. wt. of III was reduced. The reaction of HO₂CRCO₂H with H₂NNH₂ in the absence of strong acids was slow. High temps. accelerated the reaction, but also reduced the mol. wt. of III. The highest yields and mol. wts. were obtained when instead of H₂O-CRCO₂H their K or Na salts were used. The optimum I-dicarboxylic acid salt ratio was 1:1.2; the optimum temps. were 160°, 180°, or 200° for 4-NaO₂CC₆H₄OC₆H₄CO₂Na - 4, 4-NaO₂CC₆H₄CO₂Na, or 3-NaO₂CC₆H₄CO₂Na, resp.

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USSR

VASIL'YEV, L. A., KURAMSHIN, T. A., NAZAROVA, L. P. and
TRAVNIKOVA, L. I.

"Measurement of Pressure of Light and Aerodynamic Forces
Acting on Complex Shape Body in Free-Molecule Flow"

Leningrad, Aerodinamika Razrezhennykh Gasov, 1970, pp 113-118

Abstract: The principle of the method is to measure the intensity of reflected light from an illuminated body in all directions in space, then to calculate the pressure of light force by integrating the intensity of light.

A model of the body to be investigated made of the same material is placed on a gimbals mount, it is illuminated by a collimator mounted in a fixed position relative to the model. The model is rotated in all directions relative to a stationary photocell located at a distance exceeding 50 times the size of the model. The intensity of reflected light measured by the photocell is integrated by means of a computer.

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USSR

VASIL'YEV, L. A., et al., Aerodinamika Razrezhennykh Gasov, 1970, pp 113-118

As to the aerodynamic forces it has been shown in reference [17] that they can be determined by measuring the pressure of light, provided that the distribution of reflected light is similar to the distribution of molecules reflected from the body during its travel through the free-molecule flux.

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USSR

TRAVUSH, V. I., TSEYTLIN, A. I.

UDC: 639.3.534.1

"Inverse Problem of the Theory of Oscillations for a Circular Plate on an Elastic Base"

Tr. TsNII stroit. konstruksiy (Works of the Central Scientific Research Institute of Construction Elements), 1971, vyp. 17, pp 16-25 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7V179)

Translation: The authors determine the function $q(r, \theta)$ which is a variable bedding coefficient in the known equation of motion accompanying deformations of a thin elastic plate

$$D\Delta\Delta W(r, \theta, t) + m \frac{\partial^2}{\partial t^2} W(r, \theta, t) + q(r, \theta) W(r, \theta, t) = 0$$

where D and m are respectively the cylindrical rigidity and the running density of the plate; Δ is the Laplace operator in polar coordinates; W is flexure; t is time. The boundary conditions correspond to the general case of elastic fastening. The quantities $q(r, \theta)$ and $W(r, \theta)$ are expanded in Fourier series with respect to the angular coordinate,

USSR

TRAVUSH, V. I., TSEYTLIN, A. I., Tr. TsNII stroit. konstruksiy, 1971, vyp. 17, pp 16-25

and the ordinary differential equation for the Fourier component

$$\left[\left(\frac{\partial^2}{\partial r^2} + \frac{1}{r} \frac{\partial}{\partial r} - \frac{\kappa^2}{r^2} \right) + q_n(r) - \lambda^2 \right] \varphi_n(r) = 0$$

is then found. Then, as the authors confirm, a Fredholm's integral equation of the second kind is obtained which can be used to determine $q_n(r)$. Yu. K. Konenkov.

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USSR

TRAVUSH, V. I.

UDC 539.3

7
"Bending of Nonisolated Slabs Supported by a General Type Linearly Deformable Base"

V sb. Issled. po teorii sooruzh. (Research on the Theory of Structures--collection of works), Vyp 17, Moscow, "Gostroyizdat", 1969, pp 73-84 (from RZh-Mekhanika, No 3, March 1970, Abstract No 3V154)

Translation: Bending of nonisolated slabs formed by orthogonal systems of straight lines is examined. Bending of nonisolated, freely supported slabs is studied in detail: semi-infinite, quarter-semi-infinite, rectangular, and also in the form of infinite strips arranged on a linearly deformable base. The solution for an unbounded slab loaded with a chosen rupturing load is adopted as the basis.
Resume

1/1

USSR

TRAVUSHKINA, L. F., and VIENBERG, I. G., Leningrad Institute of Chemical
Pharmaceutics

UDC 615.31:547.333.4].015.11

"Quaternary Ammonium Salts of Dialkylaminoalkyl Esters of 4-Amino(nitro)-2-chlorobenzoic Acids"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 3, 1973, pp 6-8

Abstract: In searching for new cholinesterase inhibitors and myorelaxants, quaternary ammonium salts of dialkylaminoalkyl esters (I) were prepared by treating the corresponding I of 4-amino-2-chlorobenzoic acid or 4-nitro-2-chlorobenzoic acid with alkyl halides in anhydrous alcohol or acetone. Reaction of the chloride form of the acids with the appropriate dialkylamino alcohols led to the formation of I. Thin layer chromatography on aluminum oxide in dichloroethane: ethanol (17.5:2.5) and (16.5:3.5) solvent systems, showed that the R_f values of the I of 4-nitro-2-chlorobenzoic acid were greater than those of the corresponding amino esters due to the greater chromatographic mobility of the NH_2 group in comparison with the NO_2 group. R_f values for the quaternary ammonium salts were dependent on the alkyl residues on N^+ , as well as on the distance between the ester oxygen and the N^+ atom. An amino ester with 3 CH_3 groups on the nitrogen atom showed the greatest biologic activity in frog

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USSR

TRAVUSHKINA, L. F. and VITENEERG, I. G., *Khimiko-Farmatsevticheskiy Zhurnal*,
No 3, 1973, pp 6-8

rectus abdominis contraction test, and 2.5 μ g/kg administered intravenously
to anesthetized cats caused a depolarizing type of block at the neuromuscular
junction.

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USSR

KOSTENKO, L. I., TIMOSHENKO, A. G., TRAYNIN, E. Z.

"Electronic Modeling of Problems of Operations Research"

Elektronnoye Modelirovaniye Zadach Issledovaniya Operatsiy [English Version Above], Kiev, 1973, 163 pages (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V477K).

Translation: Chapter 1. General Problems of Linear Programming. Chapter 2. Problems of Extreme Paths on a Graph. Chapter 3. Problems of Network Planning and Control. Chapter 4. Problems of Extreme Flows. Chapter 5. Combinatorial Problems. Chapter 6. The Traveling Salesman Problem. Chapter 7. Games Theory Problems.

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USSR

TRAYNIN, L. YA.

UDC 533.9

"Evaluating the Effect of Magnetic Bremsstrahlung Radiation on the Escape of Electrons From a Mirror Machine"

Moscow, Atomnaya Energiya, Unpublished Article No 581/6362, Annotation published in Vol 32, No 5, May 72, p 403

Abstract: In order to study the behavior of electrons in a mirror machine, it is important to evaluate the escape time for electrons from the working space of the mirror machine as a result of magnetic bremsstrahlung electron radiation. Equations for variations in the angle between electron velocity and magnetic field vectors, as well as for variations in electron energy, were obtained by G. Gibson and E. Laner. However, this solution was for the case of a uniform field, which permits only very approximate evaluations to be made for the case of a mirror machine. The present article makes an evaluation with application to a mirror machine with a parabolic magnetic field configuration. The author thanks B. V. CHIRIKOV, at whose initiative the work was done.

1/1

TRAYNIN, S. B.

"Estimate of Divisibility of Classes Described by Means of the Monte Carlo Method"

Metody i Modeli upr. [Methods and Models of Control -- Collection of Works], No 3, Riga, 1972, pp 94-101 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V325 by the author).

Translation: Application of the disk electrophoresis method for analysis of human blood serum leads to the necessity of solving the equation

$$y(x) = \sum_{i=1}^n \frac{a_i}{\sigma_i \sqrt{2\pi}} \exp\left\{-\frac{(x-m_i)^2}{2\sigma_i^2}\right\} + \sum_{l=1}^m \alpha_l x^l$$

for the parameters a_i , σ_i and m_i . This article discusses one method of estimation of these parameters generally used in practice.

UNCLASSIFIED
 IN CARBOHYDRATES PROLONGED THIAMINE INJECTION IN THE BODY:
 AUTHOR--(05)-OSTROVSKIY, YU.M., LUKASHIK, N.K., TREBUKHINA, R.V., DOSTA,
 G.A., MAZHUL, A.G.
 COUNTRY OF INFO--USSR
 SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 3, PP 316-322
 DATE PUBLISHED-----70
 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--THIAMINE, CARBOHYDRATE METABOLISM, PROTEIN METABOLISM, LIPID
 METABOLISM, ERYTHROCYTE, ENZYME ACTIVITY, BLOOD SERUM
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--1998/0142
 CIRC ACCESSION NO--AP0120842
 STEP NO--UR/0301/70/016/003/0316/0322
 UNCLASSIFIED

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

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. INJECTION OF THIAMINE INTO RATS AND PIGEONS DURING 1-8 MONTHS RESULTED IN THE ELEVATION OF ACTIVITY OF TRANSKETHOLASE IN ERYTHROCYTES AND PYRUVIC ACID DEHYDROGENASE IN HEART AND LIVER. AT THE SAME TIME THE DECREASE IN PHOSPHORYLASE ACTIVITY AND GLYCOGEN ACCUMULATION IN LIVER, THE INCREASE IN PLASMA ALDOLASE AS WELL AS HEART AND MUSCLE ENZYME, GLUCOSE, 6, PHOSPHATASE IN LIVER, GLYCOGENOLYSIS IN ERYTHROCYTES, CHANGES IN PROTEIN FRACTION CONTENT IN BLOOD SERUM, CHANGES IN SH GROUPS CONTENT IN THE BRAIN AND BLOOD PLASMA, AND CHANGES IN GLUTAMATE DECARBOXYLASE IN THE BRAIN WERE OBSERVED.

GRODNO. FACILITY: CHAIR OF BIOCHEMISTRY, MEDICAL INSTITUTE,

UNCLASSIFIED

UNCLASSIFIED

POSITIVE PLUS M GAMMA REACTION AT 2.9 GEV-C -U-
AUTHOR--(04)-BALDIN, A.B., ERGAKOV, V.A., TREBUKHOVSKIY, YU.V., SHISHOV,
N.N.

PROCESSING DATE--23OCT70
YIELDS P PLUS PI PRIME

COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(4), 800-4
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--PION PROTON INTERACTION, BUBBLE CHAMBER, EXCITATION CROSS
SECTION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
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STEP NO--UR/0367/70/011/004/0800/0804

CIRC ACCESSION NO--AP0127569
UNCLASSIFIED

CIRC ACCESSION NO--AP0127569 UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN INVESTIGATION OF THE CHANNELS OF THE REACTION $\pi^+ \pi^+ \pi^+$ YIELDS $\pi^+ \pi^+ \pi^+ \pi^+$ POSITIVE PLUS M GAMMA (1) WAS MADE BY MEANS OF A 120-1. C SUB3 H SUB8 XE BUBBLE CHAMBER, EXPOSED TO THE 2.9 GEV-C $\pi^+ \pi^+$ PRIME POSITIVE MESON BEAM. PHOTOGRAPHS (150,000) OF 2670 EVENTS OF THE REACTION WITH THE P MOMENTUM P SUBP FROM 02. UP TO 0.6-0.8 GEV-C WERE STUDIED. THE BRANCHING RATIOS FOR THE GREATER THAN 0.6-0.8 GEV-C WERE STUDIED. OF 1717 EVENTS WITH P SUBP IS REACTIONS (1) WITH DIFFERENT NOS. OF THE GAMMA QUANTA, 2 GAMMS, (3-4) GAMMA, (5-6) GAMMA, AND (7-8) GAMMA ARE (0.655 PLUS OR MINUS 0.10):(0.017 PLUS OR MINUS 0.010). CROSS SECTIONS OF THE REACTIONS $\pi^+ \pi^+ \pi^+$ POSITIVE PLUS P YIELDS $\pi^+ \pi^+ \pi^+ \pi^+$ AND SHOWN ON MICROFICHE. AN ANALYSIS OF THE RELATION BETWEEN THE PARTIAL CROSS SECTIONS AND THE PRIMARY PARTICLE PULSES, FOR THE REACTION $\pi^+ \pi^+ \pi^+ \pi^+$ NEGATIVE PLUS P YIELDS N PLUS NEUTRALS, SHOWED THAT THE CROSS SECTIONS WITHIN THE RANGE OF $\pi^+ \pi^+$ NEGATIVE MESONS, 2.7-3 GEV-C, HAVE A CONST. VALUE WITHIN THE LIMITS OF STATISTICAL ERROR. FACILITY: INST. TEOR. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

71 0044406

Ref. Code: UR 0239

PRIMARY SOURCE:

Fiziologicheskij Zhurnal, 1970, Vol 56,
Nr 1, pp 108-113

ON THE PROBLEM OF DYSFUNCTION MECHANISMS
IN THE FIRST PHASE OF GASTRIC SECRETION
IN PITUITARY-ECTOMIZED DOGS

By A. B. Trefilov

From the Department of Physiology, Medical Institute, Kursk

The role of the adenopituitary-adrenal system in the mechanism of the first phase of gastric secretion has been studied in gastroesophagotomised dogs. The influence of this system on the secretory gastric function has been shown to be realised not only by a direct effect on the gastric gland cells but also via the feeding centre. A change in the intensity and duration of excitation in gastric juice secretion centre plays an important role in determining the alterations in reflex secretion (such as juice secretory dynamics, duration of secretion, amount of juice, its acidity) influenced by the hormones of the adenopituitary-adrenal system. The main reason for fluctuations in the digestive capacity under these conditions evidently lies in a readjustment of the peptic cells.

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Superalloys

USSR

UDC 546.78:620.172.2 4

CHUBAROV, V. H., LEVINSKIY, YU. V., SALIBEKOV, S. YE., ~~TREILOV, A. F.~~, GRACHEV,
L. V., RODIN, YE. M., LEVINSKAYA, M. KH., DVOYCHENKOVA, L. V., Moscow

"Heat-Resistant Composition Material Based on Nickel"

Kiev, Problemy Prochnosti, No 7, 1971, pp 100-104

Abstract: Results are presented from development of the VKM-1 composition material constructed on the basis of the heat-resistant ZhS6-K nickel alloy reinforced with tungsten wire. Data are presented from metallographic and micro-radiographic studies of the compatability of the matrix with the fiber indicating insignificant interaction of the ZhS6-K alloy with the tungsten even after holding for 100 hours at a temperature of 1,200° C.

1/1

USSR

UDC 539.4

LEVINSKIY, YU. V., TRETYLOV, B. F., and DOVYCHENKOVA, L. V., Moscow, All-Union Scientific Research Institute of Aviation Materials

"Brittleness of Coated Tungsten Wire"

Kiev, Problemy Prochnosti, No 6, 1973, pp 57-59

Abstract: The effect of the nature and thickness of specially grown brittle layers on tungsten wire was examined along with their behavior during fracture. The brittle layers were formed by recrystallization or carbonization. A mechanism of brittle fracture of a ductile material is proposed during the transition from a brittle coating to a crack. It is shown that the nature of fracture depends on the plastic properties and thickness of the coating. The produced experimental data correspond qualitatively with the proposed fracture mechanism. Three figures, seven bibliographic references.

1/1

- 5 -

USSR

UDC 620.18:669.71

PORTNOY, K. I., LEVINSKIY, YU. V., SALIBEKOV, S. YE., DVOYCHENKOVA, L. V.,
and TREPILOV, B. F., Moscow

"Using the Titanium Nitride as a Diffusion Barrier in Nickel-Base Composite Materials"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May/June 73, pp 122-126

Abstract: The aim of this work was to design a commercial unit for the continuous coating of tungsten and molybdenum wire with titanium nitride and to study the behavior of these wires in a nickel matrix. The unit employs a mixture of hydrogen and nitrogen which passes into the reaction vessel and is mixed with titanium chloride. Tungsten (molybdenum) wire is drawn through the reaction vessel while heated by an electric current passing through it. The titanium tetrachloride undergoes reduction on a heated wire surface, with a simultaneous formation of titanium nitride. The optimal coating temperature was 1100°C, with a deposition rate of 0.5 μ /sec. This method makes it possible to produce coatings 3-6 μ thick on wires 300 and 310 μ thick. Titanium nitride coatings of this thickness almost completely stopped the penetration of tungsten into nickel at 1200°C and molybdenum into nickel at 1100°C during a 100-hr exposure. The strength of tungsten and molybdenum wire with titanium nitride coatings after annealing in a nickel matrix at 1000-1200°C for 1, 10, 100 hours was considerably higher than that of a similar wire without the coating.

1/1

Thermomechanical Treatment

USSR

UDC 621.771.073.8.9

KREKNIN, L.T., SHAVRIN, O.I., TREFILOV, V.G., DMITROV, L.N., BRYNDIN, V.V.,
and TOKAREV, P.S., Izhevsk Metallurgical Plant

"Thermomechanical Treatment of Cold Rolling Rollers"

Moscow, Metallurg, No 9, Sep 71, pp 31-32

Abstract: A method of high-temperature thermomechanical treatment of cold rolling rollers 20-40 mm in diameter is described. The HRC hardness obtained is not less than 60-62 and the depth of the hardened layer is about 4-5 mm. By varying process parameters, any desired layer depth can be obtained. A comparison of microstructure of samples after thermomechanical treatment at a depth of 5 mm and after conventional high-frequency hardening at 1.5-3 mm shows that in the latter case the martensite needles are smaller.

1/1

Single Crystals

USSR

UDC 669.26-172

①

ABAMIN, D. D., (DECEASED), YEBSTYUKHIN, A. I., KASLOV, V. P., RAKITSKIY, A. N., and TREFILOV, V. I., Moscow, Kiev

"Structure and Mechanical Properties of Chromium Iodide Single Crystals"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan/Feb 74, pp 143-149

Abstract: The structure and mechanical properties of chromium iodide were studied to determine why chromium is extremely brittle at room and low temperatures. Single crystals of chromium were produced from the thermal dissociation of chromium iodide which had a high degree of perfection (ratio of electrical resistances measured at 300 and 4.2° K was equal to $(1.5-3.0) \times 10^2$). Bend tests of the single crystals showed that the modulus of elasticity for chromium has a minimum value in the $\langle 111 \rangle$ direction which is caused by the accumulation of dislocations in the $\{111\}$ plane, being higher than in planes $\{100\}$ and $\{110\}$. It was also noted that with increased purity of the single crystals from interstitial impurities the specific surface energy minimum transfers from plane $\{111\}$ to plane $\{100\}$. Therefore, brittle slip in chromium single crystals occurs in these two planes. Six figures, two tables, 32 bibliographic references.

ISSR

UDC 669.017:620.18

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

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

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 71, pp 67-74

Abstract: The structure of a chromium alloy containing 34.4 wt % Ni was investigated by methods of electron-microscopy of thin foils and X-ray and metallographic analyses, after being subjected to various thermal and thermo-mechanical treatments. The investigation data are compared with mechanical bending test data and analyzed from the standpoint of dislocation concepts and ideas of the character of the electronic structure of transition metals. Reference is made to microphotographs of the structure of the hardened alloy Cr - 34.4 Ni and its structural changes resulting from annealing at different temperatures and to diagrams showing effects of annealing at 900°C on mechanical properties, lattice parameter, hardness, and relative quantities of α - and γ - phases. The probability is indicated of increasing the strength

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USSR

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

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

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- 19 -

USSR

UDC 539.56

BELOUS, O. A., DANILOVTSEVA, O. G., KUZNETSOVA, V. A., MAL'TSEV, M. V.,
MINAKOV, V. N., ~~TREILOV, V. I.~~, KHACHATUROV, A. A., SHCHUKIN, A. A.,
Moscow, Kiev. VNIITS (All-Union Scientific Research Institute of Hard
Alloys); Institute of Metallophysics. Academy of Sciences, Ukrainian SSR

"An Investigation of the Influence of Admixtures of Carbon and Zirconium
Carbide on the Cold Brittleness of Cast Molybdenum"

Kiev, Problemy Prochnosti, No. 6, 1971, pp 97-101

Abstract: An investigation is made of the influence of carbon and zirconium carbide upon the structure of cast molybdenum alloys; and of the relationship of the structure to the temperature of transition to a brittle state. It is found that even for alloys which have a complex structural state, the rules governing the change of the cold-brittleness temperature may be explained if account is taken of the composition of the solid solution, its structural state, and the nature of the formation of excess phases on the grain boundaries. 5 figures, 1 table, 11 references.

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USSR

UDC 539.5

DANYUSHCHENKOV, I. A., IVASHCHENKO, R. K., MIL'MAN, YU. V.,
~~TRETILOV, V. I.~~, YAKUSHINA, A. I., Kiev

"Influence of Structure and Testing Conditions on the Mechanical
Properties of Low-alloyed Molybdenum"

Kiev, Problemy Prochnosti, No 12, Dec 70, pp 58-63

Abstract: A correlation is established between the mechanical characteristics produced in testing of type TSM-2A sheet molybdenum with various structural states in extension and flexure. It is demonstrated that the ratio of these characteristics decreases slightly as the deformation rate is increased. The plasticity characteristics are independent of the deformation rate if the test temperature is much higher than the temperature of transition to the brittle state, and decrease rapidly as the deformation rate increases if the test temperature is near the temperature of transition to the brittle state.

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USSR

UDC:539.3

MIL'MAN, Yu. V., ~~TREFILOV, V. I.~~, UDOVENKO, A. A., Kiev

"Specifics of the Mechanism of Plastic Deformation of Niobium"

Kiev, Problemy Prochnosti, No. 12, Dec 70, pp. 45-50

Abstract: The change in the dislocation structure and mechanical properties of polycrystalline niobium resulting from plastic deformation and annealing is studied. The differences in the mechanism of plastic deformation of niobium from that of molybdenum and other body centered cubic metals in group VIA are related to the decreased rigidity (directivity) of the interatomic bond and the increased value of activity volume V in niobium.

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USSR

UDC 669.018.45-122.4

KAVERINA, S. N., LIZUNOV, V. A., MINAKOV, V. N., and TREFFILOV, V. I.,
Institute of Metal Physics, Academy of Sciences Ukr SSR

"Structural Changes in the Deformation of Molybdenum Alloys"

Kiev, Metallofizika, No 39, 1972, pp 57-65

Abstract: Molybdenum alloys are examined after different modes of thermo-mechanical treatment: high-temperature rolling plus intermediate heatings, and low-temperature rolling plus intermediate anneals. Data are presented for the change in structure which were obtained by methods of optic and electron microscopy, from lattice parameters and mechanical properties of alloys in the deformed state and after annealing in the 1100-2000°C interval. It was shown that the use of low-temperature rolling significantly lowers the ductile-brittle transition temperature, increases the number of bends, and increases the recrystallization temperature. 7 figures, 1 table, 14 bibliographic references.

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Transformation and Structure

USSR

UDC 669.27.017



VEDERNIKOVA, V. A., MIL'MAN, Yu. V., POSTNOV, L. M., POPOV, A. P., SLENZAK, G. YE., TREFILOV, V. I., and SHUMILOV, I. K., Institute of Metal Physics, Academy of Sciences, Ukr SSR

"Structural Changes During Annealing of a Precipitation Hardened Tungsten Alloy"

Kiev, Metallofizika, No 40, 1972, pp 45-49

Abstract: Translucent electron microscopy, metallography, and diffraction line width measurements were used to study the structural changes resulting from the annealing of deformed tungsten in which 0.2% ZrC had been added during melting. At up to 1800°C a dispersed cellular structure is preserved in the alloy along with a structure stabilized by precipitations of a second phase. These were identified as ZrC in an x-ray investigation of the deposit obtained during electrochemical dissolving of the tungsten. In isolated sections of the alloy, with an increased density of second-phase particles, the cellular structure was preserved even after annealing at 2340°C. Increased recrystallization temperature is accompanied by increased heat resistance. 4 figures, 9 bibliographic references.

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USSR

UDC 669.285'295'296;784.018.44:620.185

GRISHOV, V. L., DRACHINSKIY, A. S., KAVERINA, S. N., FISARENSKO, V. A., and
TRETYAKOV, V. I., Institute of the Physics of Metals, Academy of Sciences
Ukrainian SSR

"Change in the Structure and Properties of Molybdenum After Heating in the
High-Temperature Range"

*Metallofizika. Resp. mezhd. sb. (The Physics of Metals. Republic Inter-
departmental Collection of Works)*, 1970, vyp. 30, pp 42-49 (from *RZh-Metallur-
giya*, No 3, Mar 71, Abstract No 31732 by Authors)

Translation: The following two types of heat treatment were used to obtain
different structural states of Mo alloy with 0.39% Ti, 0.19% Sr, and 0.007% C:
annealing in a TVY-4 furnace in a vacuum of $5 \cdot 10^{-4}$ mm Hg with four-hour
holding and a cooling rate of ~ 1 deg/sec; heating by passing alternating
current through a specimen at a heating rate of ~ 150 deg/sec and a cooling rate
of 200 deg/sec. Specimens annealed at different temperatures under these
conditions underwent mechanical tensile tests and microhardness measurements.
The influence of structure on the strength characteristics of the alloy was
studied. A significant increase was found in the strength and ductility values
of specimens electric-heat-treated to 2000° as compared with annealing heat-
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USSR

GRISHOV, V. L., et al., Metallofizika. Resp. mezhvcd. sb., 1970, vyp. 30,
pp 42-49

treated specimens. Aging processes were observed in the Mo alloy in some
cases after heat treatment. Eleven illustrations. Bibliography with four
titles.

2/2

- 14 -

USSR

UDC: 539.5

2

Drozd, N. P., Ivashchenko, R. K., Maksimovich, G. G., Mil'man, Yu. V.,
Slenzak, G. Ye., Trefilov, V. I., Kiev-L'vov

"Studies of Stability of the Structure and Mechanical Properties of Molybdenum
Under Long-term Temperature and Stress"

Kiev, Problemy Prochnosti, No 4, Apr 72, pp 68-75.

Abstract: The influence of long-term application of temperature and stress on the structural stability and mechanical properties of molybdenum-based low alloys with preliminary formation of cellular structure is studied. It is shown that changes in mechanical properties of deformed molybdenum alloy during annealing under load are determined basically by the annealing temperature, not by the load or holding time at the temperature, within the temperature range studied (300-1000°C). The action of the load during annealing of deformed molybdenum causes no significant increase in temperature of transition to the brittle state. The introduction of dispersed second phase particles allows reliable stabilization of the cellular structure in molybdenum at 1000°C with significant loads over long periods of time. If annealing of deformed molybdenum is performed in the temperature interval in which primary recrystallization occurs, additional application of loads during annealing can slightly increase the recrystallization rate and decrease strength characteristics.

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USSR

UDC 613.6:613.4:615.285.7.012.1

TREFILOV, V. N., FAYERMAN, I. S., and BORISOVA, Ye. P., Gor'kiy Institute of Labor Hygiene and Occupational Diseases

"Contamination of Work Clothes and Skin of Workers Engaged in the Manufacture of Metaphos and Chlorophos"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 2, 1971, pp 51-53

Abstract: Among workers engaged in the production of the organophosphorus insecticides metaphos and chlorophos, the toxic effects of chronic exposure to small quantities of the pesticides were manifested by inhibition of cholinesterase activity at the end of a shift and appearance of Heinz-Ehrlich bodies in erythrocytes and of para-nitrophenol in the urine. These shifts were equally pronounced in those wearing gas masks (to rule out inhalation as a mode of entry for the insecticides) and in those not wearing masks. The presence of metaphos and chlorophos in washings from the skin and work clothes confirmed that the skin is one of the principal routes through which organophosphorus compounds enter the body.

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172 022

UNCLASSIFIED

PROCESSING DATE--230CT70

TITLE--GAS PHASE REACTIONS FOR THE PREPARATION AND TRANSFORMATIONS OF
CHLORINATED ETHANES. CHLORINE INITIATED DEHYDROCHLORINATION OF
AUTHOR--(05)-KRISHTAL, N.F., FLID, R.M., PIMENOV, I.F., SONIN, E.V.,
TREGER, YU.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 248-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATION, CHLOROETHANE, CHEMICAL KINETICS, CHEMICAL
REACTION RATE, CALCULATION, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1995/1405

STEP NO--UR/0076/70/044/001/0248/0249

CIRC ACCESSION NO--AP0116852

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116852

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION IS A HALF ORDER REACTION WITH RESPECT TO CL AND C SUB2 H SUB2 CL SUB4. TO DET. THE KINETIC PARAMETERS, A SERIES OF EXPTS. WERE CARRIED OUT AT 350-425 DEGREES BY CHANGING (FOR EACH INVESTIGATED TEMP.) CL AND C SUB2 H SUB2 CL SUB4 AMTS. THE REACTION RATE CONSTS. WERE CALCD., AND A DIAGRAM WAS PRESENTED OF THE DEPENDENCE LOG K EQUALS F(1-T). THE ACTIVATION ENERGY WAS 23.8 KCAL-MOLE, AND THE COEFF. 6.67 TIMES 10 PRIME7 SEC PRIME NEGATIVE1. FACILITY: INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.374

SVECHNIKOV, G. M., SERGEYEV, R. M., TREGUB, I. K.

"Pulse Circuits on Semiconductors and Ferrites"

Moscow, Impul'snyye skhemy na poluprovodnikakh i ferritakh (cf. English above), Voenizdat, 1972, 269 pp, ill. 1 r. (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12G184K [résumé])

Translation: The book examines principles of construction, physical processes and computational relations in pulse circuits on semiconductor devices and ferrites; examples of calculation of fundamental types of circuits are presented. The book is a text for radio officers, and also for students of intermediate and higher military educational institutions.

1/1

Pulse Technique

USSR

UDC: 621.374:621.382.2/.3

SVECHNIKOV, G. M., SERGEYEV, R. M., and TREGUB, I. K.

"Impul'snyye skhemy na poluprovodnikakh i ferritakh" (Pulse Circuits Using Semiconductors and Ferrites) Moscow, 1972, 272 pp

Abstract: The purpose of this book is to present information, both qualitative and quantitative, on pulse circuitry involving semiconductors and ferrites. In the process of the exposition, a good many design and computational formulas relating to these circuits are derived. The accent of the book is primarily on the practical, with little attention given to the physical or chemical theory of the semiconductors or ferrites figuring in it.

It is divided basically into four chapters. The first is concerned with transistor pulse circuits, the second with pulse circuits with negative-resistance elements, the third with pulse circuits involving ferrite cores and semiconductors, and the fourth with combination logic circuits of the NOT, AND, and OR type.

A bibliography of 47 titles is appended.

1/7

USSR

SVECHNIKOV, G. M., SERGEYEV, R. M., and TREGUB, I. K.

"Impul'snyye skhemy na poluprovodnikakh i ferritakh" (Pulse Circuits Using Semiconductors and Ferrites) Moscow, 1972, 272 pp, p 3)

Translation:

FOREWORD

Because of the broad application of semiconductor and ferrite pulse systems in electronics, a need for literature on such circuits has risen and grown.

This book considers the principles of the structure, physical processes, and basic computational relationships in pulse circuits using semiconductor devices and ferrites, and offers examples of design of basic circuit types.

It is a textbook for radio officers and is also meant for students of intermediate and advanced military schools.

Chapter 1 was written by I. K. Tregub; Chapters 2 and 4, except for Articles 5 and 6, were written by G. M. Svechnikov; Chapter 3 and Articles 5 and 6 of Chapter 4 were written by R. M. Sergeyev.

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USSR

SVECHNIKOV, G. M., SERGEYEV, R. M., and TREGUB, I. K.

"Impul'snyye skhemy na poluprovodnikakh i ferritakh" (Pulse Circuits Using Semiconductors and Ferrites) Moscow, 1972, 272 pp, pp 268-269

Translation:

TABLE OF CONTENTS

Foreword

Chapter 1. Transistorized Pulse Circuits

 Article 1.1. Transistor switching characteristics

 1.2. Limiter-amplifiers

 1.3. Regenerative pulse circuits.

 1.4. Multivibrators

 1.5. Delayed multivibrators

3/7

TREGUB, I. T.

MEDICINE

1-8443
VOYENNO-MEDITSINSKIY ZHURNAL, NO. 6, 1979, pp. 98-100
108

ORIGINAL RESEARCH WITH TEMPORARY ENDOPROSTHESES
(Experimental Investigations)

by I. T. Tregub

Relating upon clinical experience and upon data in the medical literature on the problem of restoration of urethral passage, we carried out experimental research with the purpose to establish the possibility of the survival (keeping) of different free grafts at the existing methods of urine tapping (cystostomy, percutaneous catheter, endoprosthesis), study of the regenerative processes of urethral tissues and of the comparative values of regeneration endoprosthesis.

The experimental animals (dogs) five series of experiments were made on urethral plastic surgery with free endoprosthesis grafts without cystostomy and with cystostomy. The principal series of the operation in 1 cm length was restored. In the first series of experiments the formal defect was repaired with a free tubular mucosal flap taken from the upper lip (uroplasty); in the second series with the urethral segment of a fresh cadaver of dog (homoplasty); in the third with an urethral segment from a bull (heteroplasty); in the fourth with frozen stoker tubule (alloplasty). The plastic operation was done on a chloroform temporary endoprosthesis (Figure 1). The stumps of resected urethra were fixed with silk sutures. The stumps of resected endoprosthesis. The threads of the purse-string sutures (one by one) were tied to each other by bringing together the short stumps of the urethra (Figure 2). Thus, the most frequent complications could be prevented. There were 85 operations made on 85 dogs.

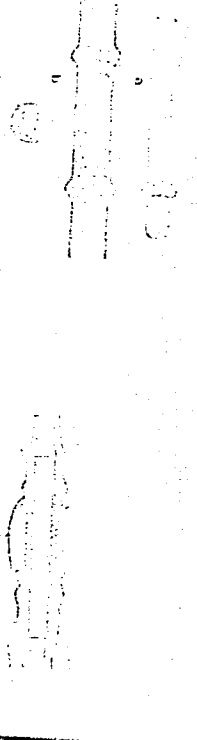


Figure 1. Outline of urethral prosthesis with the aid of a temporary endoprosthesis.

In the first to fourth series of experiments the urethral prosthesis was through the natural way through a temporary endoprosthesis. The postoperative course was uneventful. Already in the morning of the next day the animals got up, moved about, took food, their urination was free. The animals were kept under observation from one day to 16 months. In cases when the animals

Figure 2. Urethral alloplasty on endoprosthesis (the threads of purse-string sutures are tied to each other one by one).

TITLE--PROTOLYTIC REACTIONS AND ANALYTICAL PROPERTIES OF PHENYLANTHRANILIC ACID -U
AUTHOR--(04)-FRUMINA, N.S., PETRIKOVA, K.G., TREGUB, YE.G., PLETNEV, S.V.
COUNTRY OF INFO--USSR
SOURCE--Zh. ANAL. KHIM. 1970, 25(3), 434-9
DATE PUBLISHED-----70
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PROCESSING DATE--20NOV70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ABSORPTION SPECTRUM, PROTON, AMINE, BENZOIC ACID, BENZENE DERIVATIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1127
CIRC ACCESSION NO--AP0128554
STEP NO--UR/0075/70/025/003/0434/0439
UNCLASSIFIED

CIRC ACCESSION NO--AP0128554
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. THE EXISTENCE LIMITS OF MOL. AND IONIZED FORMS OF PHENYLANTHRANILIC ACID (I) WERE ESTABLISHED BY STUDYING THE ABSORPTION SPECTRA OF I. THE REDOX POTENTIAL OF I WAS MEASURED OVER A WIDE ACIDITY RANGE AND ITS CHANGE IN RELATION TO THE PROTOLYTIC REACTIONS WAS ESTABLISHED. DURING PROTONATION, THE P ELECTRONS OF THE N ATOM ARE IMMOBILIZED, RESULTING IN A CHANGE IN THE SPECTRUM. COMPARISON OF THE SPECTRA OF PH SUB2 NH AND I INDICATE THAT THE LONG WAVE BAND IN THE SPECTRUM OF THE LATTER IS LINKED TO THE PRESENCE OF AN ELECTRON ACCEPTOR SUBSTITUENT, THE CARBOXYLIC GROUP, AND THE GRADUAL DISAPPEARANCE OF THIS BAND DURING PROTOLYSIS INDICATES A CHANGE IN THE ELECTRON DISTRIBUTION IN THE MOL. AS A RESULT OF THE FORMATION OF A 2ND ELECTRON ACCEPTING GROUP (PROTONIZED N). THE SOLY. DATA AND ABSORPTION SPECTRA WERE USED TO CALC. THE ACID DISSOCN. AND THE PROTONATION CONSTS. OF I: PK SUBDISSOLN. 3.99 PLUS OR MINUS 0.028 AND PK SUBPROT MINUS 1.35 PLUS OR MINUS 0.065, RESP.
FACILITY: SARATOV STATE UNIV., SARATOV, USSR.

UNCLASSIFIED

USSR

UDC: 577.1:615.7/9

VORONINA, N. M., TREGUBENKO, I. P., LATOSH, N. I., SUKHACHEVA, Ye. I.,
SEMENOV, D. I.

"Effect of Complexing Agents (Iminodiacetate Derivatives of the Oxytriphenylmethane Series) on the Behavior of Iron-59, Zinc-65, Strontium-90, Yttrium-91 and Cerium-144 in an Organism"

Tr. In-ta ekol. rast. i zhivotnykh. Ural'sk. fil. AN SSSR (Works of the Institute of Animal and Plant Ecology. Ural Affiliate, Academy of Sciences of the USSR), 1970, vyp. 68, pp 68-75 (from RZh-Biologicheskaya Khimiya, No 23, 10 Dec 70, Abstract No 2372205)

Translation: The effectiveness of the complexing agents (amount of extraction of yttrium and cerium from the organism and the degree of reduction of their deposition in tissues) increases syrbatically with the increase in the number of iminodiacetate groups in the molecule. With respect to their effectiveness, preparations with three and four groups are therapeutically on a level with ethylenediaminetetraacetic acid sodium salt (data from experiments with yttrium), and in some instances (experiments with cerium) are considerably more effective. From the authors' resumé.

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USSR

UDC: 577.1:615.7/9

PODGORNAYA, I. V., LATOSH, N. I., TREGUBENKO, I. P., SEMENOV, D. I.

"Effect of Complexing Agents (Hydroxy- and Sulfo-Substituted Ethylenediamine-tetraacetic Acid Salts and Iminodiacetic Acid) on the Behavior of Cerium-144 in an Organism"

Tr. In-ta ekol. rast. i zhivotnykh. Ural'sk. fil. AN SSSR (Works of the Institute of Plant and Animal Ecology. Ural Affiliate, Academy of Sciences of the USSR), 1970, vyp. 68, pp 76-80 (from RZh-Biologicheskaya Kniniya, No 23, 10 Dec 70, Abstract No 23F2209)

Translation: It was found that the introduction of one or two hydroxy groups into the molecule increases its effectiveness, while the addition of a sulfo group reduces effectiveness. From the authors' resumé.

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USSR

UDC: 577.1:615.7/9

TREGUBENKO, I. P., SEMENOV, D. I., SUKHACHEVA, Ye. I., MEN'SHIKOVA, G. A.,
BELOVA, M. N.

"Accessibility of Yttrium-91 Deposited in the Tissues of an Organism for
Diethylenetriaminepentaacetic Acid Sodium Salt"

Tr. In-ta ekol. rast. i zhivotnykh. Ural'sk. fil. AN SSSR (Works of the
Institute of Animal and Plant Ecology. Ural Affiliate, Academy of Sciences
of the USSR), 1970, vyp. 68, pp 87-94 (from RZh-Biologicheskaya Khimiya,
No 23, 10 Dec 70, Abstract No 23F2206)

Translation: The paper demonstrates the parallelism between the effective-
ness of diethylenetriaminepentaacetic acid sodium salt and the concentration
of yttrium-91 in the kidneys and liver. M. Sh.

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USSR

UDC: 577.1:615.7/9

TREGUBENKO, I. P., SEMENOV, D. I., SUKHACHEVA, Ye. I., MENOSHIKOVA, G. A.,
BELOVA, M. N., TARAKHTIY, E. A.

"Accessibility of Radioactive Cerium for Extraction From an Organism by
Diethylenetriaminepentaacetic Acid. Relationship Between the Quantity
Extracted and That Contained in the Organism"

Tr. In-ta ekol. rast. i zhivotnykh. Ural'sk. fil. AN SSSR (Works of the
Institute of Animal and Plant Ecology. Ural Affiliate, Academy of Sciences
of the USSR), 1970, vyp. 68, pp 81-86 (from RZh-Biologicheskaya Khimiya,
No 23, 10 Dec 70, Abstract No 23F2204)

Translation: The amount of cerium-144 extracted by the complexing agent in
the daily urine of rats amounts to $\frac{1}{10}$ of the quantity of the isotope con-
tained in all soft tissues (the cerium in the skeleton does not participate
in this process). This is the actual ratio for various periods after using
the complexing agent (from the 8-th to the 126-th day of the experiment) in
a dose of 100 μ oles in a rat. Repeated injection of the complexing agent
does not change this ratio when the cerium extracted with the first injec-
tion is taken into account. From the authors' resumé.

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USSR

UDC: 577.1:615.7/9

TREGUBENKO, I. P., SUKHACHEVA, Ye. I., BELOVA, M. N., NYATINA, O. A., MEN'-
SHIKOVA, G. A., SEMENOV, D. I.

"Effect of Ethylenediaminetetraacetic, Cyclohexylaminetetraacetic and Diethy-
lenetriaminepentaacetic Acid Sodium Salts on the Behavior of Cadmium-115 in
an Organism"

Tr. In-ta ekol. rast. i zhivotnykh. Ural'sk. fil. AN SSSR (Works of the
Institute of Plant and Animal Ecology. Ural Affiliate, Academy of Sciences
of the USSR), 1970, vyp. 68, pp 65-67 (from RZh-Biologicheskaya Khimiya,
No 23, 10 Dec 70, Abstract No 23F2208)

Translation: The cadmium complex with ethylenediaminetetraacetic acid sodium
salt is partially dissociated under conditions in the organism, whereas
cadmium complexes with cyclohexylaminetetraacetic and diethylenetriamine-
pentaacetic acid sodium salts, which have higher constants of stability,
are almost completely eliminated from the organism of rats within the first
few days. Early application of the complexing agents appreciably reduces
the deposition of cadmium in the tissues, and increases its elimination with

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USSR

TREGUBENKO, I. P., et al., Tr. In-ta skol. rast. i zhivotnykh. Ural'sk. fil. AN SSSR, 1970, vyp. 68, pp 65-67

urine. Diethylenetriaminopentaacetic acid sodium salt has the most pronounced effect. Stable complexes of cadmium-115 are eliminated almost entirely through the kidneys, part of the isotope being selectively retained in the kidneys (23-43 percent of the residue in the organism), which may be utilized for irradiation of kidney tumors. From the authors' resumé.

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UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--FLOTATION PROPERTIES OF PHOSPHORUS COMPOUNDS CONTAINING SULFUR -U-

AUTHOR--(04)-SOLOZHENKIN, P.M., MASTRYUKOVA, T.A., LOSEVA, N.P.,
TREGUBENKO, N.I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK TADZH. SSR 1970: 13(4), 26-30

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLOTATION REAGENT, GALENA, THIOL, BENZENE DERIVATIVE,
PHOSPHATE ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1400

STEP NO--UR/0425770/013/004/0026/0030

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PROCESSING DATE--27NOV70

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

ABSTRACT. THE FLOTATION OF GALENA, PYRITE, AND ANTIMONITE WAS STUDIED AS A FUNCTION OF THE CONC. OF MONO AND DITHIOPHOSPHORIC AND PHOSPHOROUS ACIDS. THE EFFECT OF PH ON THE FLOTABILITY OF GALENA BY DIETHYL THIOPHOSPHINATE, DIETHYL THOPHOSPHATE, AND DIPHENYL DITHIOPHOSPHINATE OF DIFFERENT CONCNS. WAS ALSO DETD.

FACILITY: INST. KHII., DUSHANBE, USSR.

UNCLASSIFIED

172 040

TITLE--RELATION BETWEEN THE DIMENSIONS OF A SHAFT AND THE CONDITIONS OF AUTOMATICALLY BUILDING UP WITH AN ELECTRODE STRIP -U-
AUTHOR--KRUTIKHOVSKY, V.G., TREGUBOV, G.G.

UNCLASSIFIED

PROCESSING DATE--11SEP70

COUNTRY OF INFO--USSR

SOURCE--AVTOMAT. SVARKA, JA. 1970, 23(1) 25-27

DATE PUBLISHED-----70

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

TOPIC TAGS--CARBON, SHAFT, ELECTRODE, WELDING TECHNOLOGY, SURFACE PROPERTY, METAL COATING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1211

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UNCLASSIFIED

2/2 040

CIRC ACCESSION NO--AP0107687

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. PROBLEMS ARISING IN THE BUILDING UP OF WORN SHAFTS BY MEANS OF AN ELECTRODE STRIP ARE DISCUSSED THEORETICALLY AND IN THE LIGHT OF EXPERIMENTS WITH C STEEL PLATES. AN EMPIRICAL RELATIONSHIP IS ESTABLISHED BETWEEN THE DIMENSIONS OF THE SHAFT AND THE PARAMETERS OF THE BUILDING UP PROCESS (DENSITY OF THE BUILDING UP METAL, RATE OF FLOW, ETC.). THE EMPIRICAL RELATIONSHIP AGREES WITH THEORY; ANY RESIDUAL SLIGHT DISCREPANCIES ARE ATTRIBUTED TO THE SIMPLIFYING ASSUMPTIONS MADE REGARDING THE FLOW OF HEAT IN THE SYSTEM.

UNCLASSIFIED

USSR

UDC: 51:330.115

TREGUBOV, G. G.

"Method and Algorithm for Mathematical Modeling of a Complex Transportation System on a Digital Computer"

Nauch. tr. Krasnodar. politekhn. in-t (Scientific Works of Krasnodar Polytechnical Institute), 1970, vyp. 30, pp 75-102 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V533)

[No abstract]

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