"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

VLADIMIROV, V. I., et al., Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 72, pp 76-82

method for the determination of the number of defects, the cross rolling method can be used successfully for the investigation of the process of metal failure. Three illustrations, three formulas, 17 bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 539.3

VLADIMIROV, V.I., ORLOV, A.N. (Moscow), Physicotechnical Institute imeni A.F. Ioffe, Academy of Sciences, USSR

"Thermally Activated Origin of Microcracks in Crystals"

Kiev, Problemy Prochnosti, No 2, 1971, pp 36-38

Abstract: A brief analysis is given of a possible system of thermally activated origin of microcracks in crystals by means of fusion of the leading accumulation dislocations with account taken of the movement of succeeding dislocations. The obtained results have led to the reconsideration of some concepts concerning the necessary conditions of the power advantage of this process, and the least necessary number of dislocations in the accumulation. 2 figures. 9 bibliographic entries.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 548.4

VLADIMIROV, V. I., and KHANNANOV, Sh. Kh., Physicotechnical Institute imeni A. F. Ioffe

"The Formation of Cracks in the Braked Slip Band"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 4, Apr 71, pp 838-842

Abstract: A study is made of the formation of cracks of various types in the braked slip band. Taken into account are conditions under which the slope sides lose their stability and begin to disintegrate. The conditions under which cracks develop perpendicularly to slip lines in their fore part were established. When the development of cracks parallel to the slip lines is related to the break of dislocation sides in the band, their origination is specified by conditions of the coming disintegration of slope sides. It is shown that the strength of slope sides is characterized by a dimensionless factor which can be determined from a given system of equations of the configuration of the bent slope side. The bending of slope sides and their stability in an inhomogeneous stress field created in the slip band by other slope sides is analyzed. One illustr., seven formulas, eleven biblio. refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 539.4.01

VLADIMIROV, V. I., and KHANNANOV, Sh. Kh., Physico Technical Institute imeni A. F. Ioffe, Academy of Sciences USSR

"Plastic Mechanism of Crack Growth"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 6, Dec 70, pp 1270-1278

Abstract: The mechanism of blunt crack development was investgated from which it was shown that these cracks are intermittently developed by means of absorption of small dislocation cracks. Qualitative and quantitative results were obtained on the relative conditions of nucleation and coalescence of small cracks.

Development of a main crack may be limited by different processes in relation to the magnitude of parameter m ($m = \sigma\sqrt{l}/(\sigma\sqrt{\ell})G$). At small values of m the development of a main crack is limited by the coalescence process of counter dislocation cracks, and at large values of m-by process of their nucleation. For a given m the counteracting cracks can be nucleated at some critical distance from the apex of the main crack. This causes a

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

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VLADIMIROV, V. I., and KHANNANOV, Sh. Kh., Fizika Metallov i Metallovedeniye, Vol 30, No 6, Dec 70, pp 1270-1278

discontinuity in development of the main crack. In view of the same mechanism of development the main crack again becomes blunt after each job. The rapid development of the main crack starts only when its dimensions in the process of plastic development grow substantially inasmuch as m is increased then and the tensile stresses in the apex of the blunt crack can achieve values of the theoretical strength of a material.

The authors express their thanks to A. N. ORLOV for his evaluation of the work.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 548.4

VLADIMIROV, V. I., and KHANNANOV, Sh. Kh., Physico Technical Institute imeni A. F. Ioffe

"Pressing Problems in the Theory of the Formation of Dislocation Cracks"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 5, Sep 70, pp 490-510

Abstract: A review is made of the results of theoretical works on the formation of dislocation cracks performed in recent years. Important results are produced in the clarification of old models of crack formation. It is determined that consideration of the discrete nature of dislocations and their mobility in the process of opening of a crack leads to easier conditions of formation than those indicated by the old investigations, and that combination of the first few dislocations occurs due to thermal fluctuations. The last section discusses the principal problems of the theory of crack formation as a portion of the theory of defects in crystals.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--INTERSECTING ARRAYS OF EDGE DISLOCATIONS -U-

AUTHOR-(02)-VLADIMIROV, V.I., KHANNANOV, SH.KH.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA TVERDOGO TELA, MAR. 1970, 12, (3), 856-859

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--METAL, CRACK PROPAGATION, CRYSTAL LATTICE DISLOCATION, DISTRIBUTION FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0154 STEP NO--UR/0181/70/012/003/0856/0859

CIRC ACCESSION NO--AP0129410

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

2/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129410

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM OF INTERSECTING ARRAYS OF EDGE DISLOCATIONS IS DISCUSSED THEORETICALLY IN CONNECTION WITH THE DEVELOPMENT AND PROPAGATION OF CRACKS IN METALS AND OTHER MATERIALS. AN ANALYTICAL METHOD OF SOLVING THE PROBLEM OF TWO SYMMETRICAL ARRAYS OF EDGE DISLOCATIONS INTERSECTING AT AN ARBITRARY ANGLE AND DETERMINING THEIR DISLOCATION DISTRIBUTION IS PRESENTED. THE BEHAVIOUR OF THE DISTRIBUTION FUNCTION IS SENSITIVE TO THE ANGLE OF INTERSECTION. A COMPLETE SOLUTION IS GIVEN FOR THE CASE OF A RIGHT ANGLE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

1/2 046 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--GENERATION OF A LONGITUDINAL ELECTRIC FIELD IN CDS BY INTENSE LASER IRRADIATION -U-

AUTHOR-(03)-VLADIMIROV, V.I., PYSHKIN, S.L., FERDMAN, N.A.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 39, NR 1, PP 207-215

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CADMIUM SULFIDE, ELECTRIC FIELD, LASER RADIATION, PIEZOELECTRIC CRYSTAL, BOLTZMANN DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1729 STEP NO--GE/0030/70/039/001/0207/0215

CIRC ACCESSION NO--AP0112722

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

2/2 046 UNCLASSIFIED

CIRC ACCESSION NO--AP0112722 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER IS CONCERNED WITH THE INVESTIGATION OF LONGITUDINAL ELECTRIC FIELDS (IS APPROXIMATELY EQUAL TO 1 V-CM) ARISING IN A HOMOGENEOUS PIEZOELECTRIC CRYSTAL AT HIGH LEVEL OF OPTICAL EXCITATION. THE SIGN OF THE EFFECT CORRESPONDS TO THE DRAG OF FREE CARRIERS (ELECTRONS IN THE CASE OF CDS) IN THE DIRECTION OF LIGHT PROPAGATION. THE MAGNITUDE OF THE EFFECT AND ITS KINETICS HAVE BEEN RELATED TO LIGHT INTENSITY, TEMPERATURE, CRYSTAL ORIENTATION, AND THE DISTANCE BETWEEN THE PROBE POINTS. THE EFFECT IS ASSUMED TO BE A RESULT OF THE GENERATION OF A PHONON PACKET, REFERRED TO BY THE AUTHORS AS ACOUSTOOPTICAL DOMAIN, AND CARRIER DRAG BY THIS DOMAIN. CALCULATIONS BASED ON THE BOLTZMANN EQUATION FOR THE ELECTRON DISTRIBUTION FUNCTION GIVE A REASONABLE PHONON DENSITY INSIDE THE DOMAIN WHICH IS NECESSARY FOR GENERATING THE ELECTRIC FIELD OBSERVED. THE ESTIMATIONS BASED ON THE CALCULATED PHONON DENSITY SHOW THAT CONSIDERABLE MECHANICAL STRESSES EXIST IN THE DOMAIN AREA WHICH CAN RESULT IN THE DESTRUCTION OF THE CRYSTAL WHEN INCREASING THE LIGHT INTENSITY; SO FAR THE EFFECT EXAMINED CAN BE DIRECTLY RELATED TO THE PROBLEM OF OPTICAL STRENGTH.

FACILITY: A. F. IOFFE PHYSICO-TECHNICAL INSTITUTE, ACADEMY OF SCIENCES OF THE USSR, LENINGRAD. FACILITY: INSTITUTE OF APPLIED PHYSICS, MOLDAVIAN ACADEMY OF SCIENCES, KISHINEV.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

1/2 029 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THEORY OF THE DEFORMATION HARDENING OF ALKALIMETAL HALIDE CRYSTALS DURING SINGLE SLIP -U-

AUTHOR-(02)-VLADIMIROV, V.I., PETROV, V.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(1), 308-10

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYSTAL DEFORMATION, CRYSTAL DISLOCATION PHENOMENON, WORK HARDENING, SHEAR STRESS, ALKALI METAL HALIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0049 STEP NO--UR/0181/70/012/001/0308/0310

CIRC ACCESSION NO--AP0105148

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

2/2 029 UNCLASSIFIED

CIRC ACCESSION NO--AP0105148 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISLOCATION MULTIPLICATION MODEL IS APPLIED TO THE CALCN. OF THE RANGE OF HARDENING WHEN THE BROADENED BANDS COVER THE ENTIRE CRYSTAL. THE DISLOCATION STRUCTURE OF THE CRYSTAL AT THE STAGE OF HARDENING CONSISTS OF SCREW AND EDGE DILOCATIONS DISTRIBUTED THROUGHOUT THE VOL. SCREW DIPOLES ARE FORMED BY INTERACTING SCREW DISLOCATIONS TRAVERSING THE ENTIRE CRYSTAL. EDGE DIPOLES ARE PRODUCED BY THE DOUBLE TRANSVERSE SLIP (EJECTION) OF SECTIONS OF SCREW DISLOCATIONS. WHEN EXTERNAL SHEAR STRESS IS INCREASED, SCREW DIPOLES ARE DECOMPD, AND CHANGE INTO MOBILE DISLOCATIONS. THE CRIT. HEIGHT OF THE EJECTION IS DECREASED, AND AS A RESULT A PART OF THE EDGE DIPOLES IS ACTIVATED CHANGING INTO SOURCES OF DISLOCATIONS. MOBILE SCREW DISLOCATIONS, FORMED FROM SCREW DIPOLE DECOMPN. AND EDGE DIPOLE ACTIVATION, PERFECT THE EJECTIONS. THUS, THE ABOVE MODEL DECSRIBES WELL NOT ONLY BROADENING OF INDIVIDUAL GLIDE BANDS BUT ALSO THE DEFORMATION IN THE REGION OF HARDENING, IN THE CASE WHEN ONLY ONE SYSTEM OF SLIP IS AT WORK. FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

GODLEVSKIY, V. S., VERLAN', A. F., VLADIMIROV, V. M.

"Problem of Selection of Tolerances for Specialized Computer Elements"

Kibernet. i Vychisl. Tekhn. Resp. Mezhved. Sb. [Cybernetics and Computer Technology. Republic Interdepartmental Collection], 1972, No 18, pp 7-12 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V623, by the authors).

Translation: A method is studied for selection of tolerances for parameters of specialized computer devices, based on the use of methods of the theory of sensitivity, linear and nonlinear programming. The goal functions used may be cost, development time, weight, etc.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 621.391.81

KASHKIN, V. B., VLADIMIROV, V. M.

"On a Nonlinear Filtering Method"

V sb. Tonkiye magnitn. plenki, vychisl. tekhn. i radiotekhn. T. 1 (Thin Magnetic Films, Computer Technology and Radio Engineering--collection of works. Vol 1), Krasnoyarsk, 1971, pp 46-53 (from RZh-Radiotekhnika, No 12, Dec 71, Abstract No 12A60)

Translation: A linear adaptive filter used for isolating a signal with known correlation function from interference of arbitrary type is an extremely complex system. It is suggested that the structure of the filter can be appreciably simplified by substituting nonlinear inertialess elements with fixed parameters for the linear circuits of the adaptive filter, and by eliminating modules designed for adaptation and learning (in this case the filter will no longer be optimum). The authors consider passage of a signal of the telegraph point type, white noise in the Gaussian band, and sinusoidal interference through a frequency-selective clipper. It is found that for the same signal-to-noise ratio at the input, the signal-to-noise ratio at the output decreases with an increase in the number of

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USSR

KASHKIN, V. B., VLADIMIROV, V. M., Tonkiye magnitn. plenki, vychisl. tekhn. i radiotekhn. Krasnoyarsk, 1971, pp 46-53

channels (in the absence of sinusoidal interference). It is shown that the frequency-selective clipper is most effective in suppressing lumped interference. When studying the rms error in filtration as a function of the ratio of signal power to noise, it is found that a reduction in the clipping level leads to a reduction in the effect of interference on the total signal power combined with interference and noise at the output of the frequency-selective clipper. This is particularly evident in the case of a variable threshold. Ye. L.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

Atomic Power Engineering

VLADIMIROV, Vasiliy Sergeyevich

JPRS 56071
25 May 72

AWARDS OF MEDALS AND PRIZES

[Announcements; Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol 42, No 4, April 1972, pp 137-141]

The Gold Medal Imeni A. M. Lyapunov

The Presidium of the AS USSR has awarded the 1971 gold medal imeni A. M. Lyapunov to Academician Vasiliy Sergeyevich Vladimirov for the monograph Matematicheskiye zadachi odnoskorostnoy teorii perenosa chastits (Mathematical Problems of a One-Velocity Theory of Particle Transfer).

In connection with the development of atomic power engineering the attention of scientists has been attracted by a new class of problems of mathematical physics -- boundary-value problems for transfer equations. Those equations are widely used in geophysics and astrophysics. However, they have found very important application in problems of neutron physics and the transfer of gamma-quanta in a medium.

In the monograph which won the prize, which was published in 1961, the theory of a one-velocity stationary kinetic equation of transfer is systematically presented for the first time in world literature. The author presents mainly the results of his own investigations conducted in 1956-1959.

The first part of the work contains a mathematical formulation of the problem in suitably selected functional spaces. The general qualitative properties of the problem are investigated on that basis. A number of sufficient conditions for the existence of eigenvalues and completeness of eigenfunctions are obtained. Considered separately is the case of isotropic scattering, for which further properties of solutions of the problem, in particular certain properties of smoothness of the solutions, are established.

The second part of the monograph is devoted to methods of concrete construction of solutions (approximate) and their substantiation. Here to a substantial degree are used the results of the theoretical investigations described in the first part. The author proposes and substantiates a new variational principle for a transfer equation, one which now bears his name. By means of the variational principle found by him he succeeded in obtaining

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

VLADIMIROV, V. S. and ZHARINOV, V. V., Mathematical Institute imeni V. A. Steklov, Academy of Sciences USSR; Moscow Physical-Technical Institute

"On the Representation of the Jost-Lehmann-Dyson Type

Moscow, Teoreticheskaya i Matematicheskaya Fizika (Theoretical and Mathematical Physics), Vol. 3, No 3, June 1970, pp 305-219.

Abstract: An integral representation is obtained for functions holomorphic in tubular domains over arbitrary acute cones C and -C and in a neighborhood of real n-divided open set O and belonging to algebras H(C) and H(-C). The technique of the boundary values of the holomorphic functions of many complex variables differs considerably from the traditional methods used for obtaining the Jost-Lehman Dyson representation. Use is not made of the representation of the solution to the Cauchy problem for the wave equation. The representation obtained makes it possible to write a new Nakanishi type integral representation for the scattering amplitudes T(s, t) within the framework of the theory of perturbations corresponding to plane converging Feynman diagrams. The authors thank O. I. Sav'yalova for consultation on perturbation theory. Orig. art. has 21 refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

1/2 009 UNCLASSIFIED

TITLE--ON THE REPRESENTATION OF THE JOST LEHMANN DYSON TYPE -U- PROCESSING DATE--20NOV70

AUTHOR-(02)-VLADIMIROV, V.S., ZHARINOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 3, PP 305-319

DATE PUBLISHED--------70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--INTEGRAL FUNCTION, INTEGRAL TRANSFORM, LINEAR INTEGRAL EQUATION, CONE SHELL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1261 STEP NO--UR/0646/70/003/003/0305/0319

CIRC ACCESSION NO--AP0124912

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

2/2 009 UNCLASSIFIED

CIRC ACCESSION NO--AP0124912 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTEGRAL REPRESENTATION IS OBTAINED FOR FUNCTIONS, HOLOMORPHIC IN TUBE DOMAINS OVER ARBITRARY PROPER CONES C AND MINUS C AND IN A NEIGHBORHOOD OF A REAL N DIVIDED OPEN SET SIGMA AND BELONGING TO ALGEBRAS H(C) AND H(MINUS C). AS AN APPLICATION THE CORRESPONDING JOST LEHMANN DYSON TYPE REPRESENTATION IS DERIVED. FACILITY: MATEMATICHESKIY INSTITUT IMENI V. A. STEKLOVA, AKADEMII NAUK SSSR. FACILITY: MOSKOVSKIY FIZIKO-TEKHNICHESKIY INSTITUT.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

BOGOLYUBOV, N. N., VLADIMIROV, V. S., and TAVKHELIDZE, A. N.

"Self-Modeling Asymptotic Behavior in Quantum Field Theory, Part I"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Vol 12, No 1, 1972, pp 3-17

Abstract: This paper is the first part of a series dealing with the theory of highly inelastic processes in the interaction of leptons and nucleons. The authors begin their analysis with a Fourier transform useful in the process of the highly inelastic dispersion of an electron by a nucleon, and they propose a method for investigating the asymptotic behavior of the form factors for that transform on the basis of the general principles of local quantum field theory. They indicate the conditions under which self-modeling behavior of the form factors occurs in the asymptotic region and derive a connection between the nature of the self-modeling and the analysis of the dimensionality. It is asserted that this method can be extended to the general problem of the highly inelastic interactions of leptons and nucleons. The authors express their gratitude to D. I. Blokhintsev, A. A. Logunov, A. A. Markov, V. A. Matveyev, R. M. Muradyan, O. A. Khrustalev, V. P. Shelest, and D. V. Shirokov; they are associated with the V. A. Steklov Mathematical Institute of the Joint Institute for Nuclear Research, USSR Academy of Sciences.

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JPRS 59718
6 Aug 73
(VAN SSSR #6 1973)

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MATHEMATICAL PROBLEMS OF QUANTUM FIELD THEORY AND QUANTUM STATISTICS

(Conference in Moscow)

[Article by academicians N. N. Bogolyubov and V. S. Vladimirov, Moscow, Vestnik Akademii Nauk SSSR, Russian, No 6, June 1973, pp 113-116]

In the last 15-20 years the establishment of a new scientific direction -- contemporary mathematical physics, occupying an intermediate position between theoretical physics and mathematics -- has proceeded intensively. That direction was called into being by problems of the quantum physics of systems with an infinite number of degrees of freedom -- nonrelativistic and relativistic -- and requires the drawing in of powerful means of contemporary mathematics, such as generalized functions, functions of complex variables, functional analysis, group concepts, algebraic topology, C^*-algebras, etc.

A very important stage in the development of this new direction was work done in the USSR in the 1950s, namely: the construction of a renormalization procedure on the basis of the technique of multiplication of generalized functions and the construction of the first mathematically correct proof of dispersion correlations on the basis of the theory of analytic continuation of generalized functions. It was precisely after that work that the theoretical physicists realized the need for a more profound understanding of the mathematical nature of a number of objects which they encountered in their investigations. On the other hand, theoretical physics itself was a rich source of new mathematical problems and methods. The attention of theoretical physicists and mathematicians of many countries was attracted to the new direction.

Testifying to the continuing active development of contemporary mathematical physics was the International Conference

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--INVESTIGATION OF HIGH FREQUENCY STABILIZATION OF THE KADOHTSEV, NEDOSPASOV INSTABILITY IN AN ELECTRON HOLE PLASMA -U-

AUTHOR-(03)-VLADIMIROV, V.V., DUBOVOY, L.V., SHANSKIY, V.F.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 5, PP 1580-1585

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON HOLE, PLASMA INSTABILITY, GERMANIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0012 STEP NO--UR/0056/70/058/005/1580/1585

CIRC ACCESSION NO--AP0127662

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

2/2 018 UNCLASSIFIED

CIRC ACCESSION NO--AP0127662 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDITIONS ARE DERIVED FOR HIGH FREQUENCY STABILIZATION OF HELICAL INSTABILITY OF A CURRENT IN A SEMICONDUCTOR ELECTRON HOLE PLASMA. THE RESULTS OF THE CALCULATIONS ARE COMPARED WITH THE RESULTS OF EXPERIMENTS ON GERMANIUM. IT IS SHOWN THAT THE CALCULATION PROCEDURE PROPOSED PERMITS ONE TO EXPLAIN THE MAIN REGULARITIES OBSERVED IN THE EXPERIMENTS. FACILITY: INSTITUT ELEKTROFIZICHESKOY APPARATURY IM. D. V. YEFREMOVA.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

VLADIMIROV, V. V.

"The θ-Pinch in Semiconductors"

Leningrad, Fizika Tverdogo Tela, Vol 12, No 6, June 1970, pp 1635-1637

Abstract: In this article are derived the criteria or the formation of a diffusion θ-pinch in the nondegenerated and degenerated electron-hole plasma of semiconductors, when the inertia of the electrons and of the holes plays no part and the thickness of the skin layer is much greater than the radius of the sample. Consideration is given to the case in which the relaxation times of the current carriers are much less than the buildup time of the magnetic-field pulse. In such a case, forcing out of the electron-hole plasma toward the axis of the sample takes place as a result of the drift of electrons and holes in the magnetic field H_z and in the electrical field E_θ induced thereby. It is shown that the θ-pinch can be realized in Ge and can be used as a contactless method for the creation of non-equilibrium carriers in semiconductors.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 595.771/.772-19(470.46)

POTAPOV, A. A., VLADIMIROV, V. V., MEL'NIK, T. D., and BOGDANOVA, Ye. N., Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Ministry of Health USSR, Moscow

"The Species Composition and Diurnal Activity of Mosquitoes and Gadflies in the Lower Volga Delta"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 42, No 1, Jan/Feb 73, pp 5-11

Abstract: Observations carried out in the lower Volga delta (Obzhorsk district of the Astrakhan' Reservation) through Jun/Aug in 1966-67 indicated that 6 mosquito species, 12 gadfly species, and 2 gnat species breed there. The most numerous species of mosquitoes were Aedes vexans and Anopheles hircanus and the most numerous species of gadflies Hybomitra acuminatus and H. peculiaris and also (in 1966, a year of high floods) Chrysops relictus and Chr. flavipes. The maximum activity of mosquitoes and gnats, as far as attacks on humans were concerned, was in the morning and evening hours, and the maximum activity of gadflies in the daytime. Among mosquitoes only Ae. vexans and Ae. caspius attacked in the daytime in the shade - An. hyrcanus, An. maculipennis, and Mansonia richiardii mosquitoes became active in the cool air after dark. Of gadflies 1/2

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POTAPOV, A. A., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 42, No 1, Jan/Feb 73, pp 5-11

with mass occurence the most thermophilic were Chr. relictus and H. peculiaris, which attacked at the hottest time in the afternoon. In the evening, when inversion air currents developed, A. vexans mosquitoes were displaced upwards to the tree tops.

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USSR

UDC: 621.315.3

VASIL'YEVA, Z. A., ANDRIANOVA, I. V., VLADIMIROV, Ye. A.

"An Effective Method of Removing Enamel Insulation From Microwires"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 150-152 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V414)

Translation: The proposed method of chemically heat treating enamel insulation guarantees complete removal without mechanical and chemical damage to the microwire filament. The method is distinguished by rapidity of cleaning and by such a clean surface that soldering quality is improved and thermocompression welding can be used instead of soldering. Group cleaning is possible. The cleaning process can be mechanized. Resumé.

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USSR

UDC: 621.396.6.002:621.791.7

VLADIMIROV, Ye. A.

"Investigation of the Process of Thermocompression Welding With Local Heating"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 48-53 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V267)

Translation: Thermocompression welding with local heating by a V-shaped electrode is used for joining thin components. The author investigates problems of the reproducibility of the strength of joints when thin copper wires are welded to contact areas made by the method of brazing metal-containing pastes to ceramic surfaces. A study is made of the mutual relationship between the strength of the contact junction and the amount of residual deformation. Resumé.

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UDC: 621.396.6-181.5

YEVTIFEYEV, P. I., SOLDATENKOV, V. A., VLADIMIROV, Ye. A.

"A Tool for Unilateral Thermocompression Welding"

USSR Author's Certificate No 274630, filed 4 Mar 69, published 7 Oct 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V216 P)

Translation: This Author's Certificate introduces a unilateral thermocompression tool for welding parts covered with a layer of insulation without prestripping. Two V-shaped heating elements of refractory metal plate are welded together to form a W-shaped electrode. The gap between the elements is equal to the thickness or diameter of the part to be welded. The working sections of the heating elements are pointed to ensure local heating. The points are placed on the uppermost part to be welded. A current is passed through the free ends. The insulation is burned through, and the parts to be welded come into contact. The current in the tool changes direction and goes through the parts being welded from one pointed section to the other, i. e. there is an automatic switch to welding by two points. Heating of the elements ceases, and they act as unilateral contact welding electrodes with a microgap between them. The tool redistributes the currents in the heating and welding circuits, stabilizes the welding process, extends the useful life of the heating elements, extends

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YEVTIFEYEV, P. I. et al., USSR Author's Certificate No 274630

the range of sizes of weldable parts from 70 to 150 microns for insulation coated parts, and from 150 to 300 microns for uncoated parts, and increases the strength and reliability of joints. Two illustrations, I. M.

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USSR Biophysics

SUSLOVA, T. B., OLENEV, V. I., LORCHAGINA, M. V., and VLADIMIROV, Yu. A.,
Second Moscow Medical Institute imeni N. I. Pirogov

"Chemiluminescence Associated with the Formation of Lipid Peroxides in Biological Membranes. IV. Role of the Change in Iron Valence in These Processes"

Moscow, Biofizika, Vol 15, No 4, Jul/Aug 70, pp 622-628

Abstract: In earlier studies it was shown that a suspension of mitochondria in the presence of iron ions develops luminescence as a result of the peroxidation of lipids. Experiments are described which indicate that mitochondria in suspension accumulate and partly reduce $FeCl_3$ or a complex of Fe^{3+} + ADP when added to an incubation mixture. Catalytic agents (ortho- and pyrophosphates) increased the latent period and intensity of luminescence of the suspensions by accelerating the oxidation of Fe^{2+} with air. In the absence of phosphates, oxygen was utilized very slowly. The systems that reduce the oxidize iron, e.g., phosphates, probably also regulate the processes of peroxide oxidation of lipids in cells.

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TITLE--INFRARED SPECTROSCOPY OF PHOSPHOLIPIDS IN ANIMAL TISSUES DURING MALIGNANT GROWTH -U-

PROCESSING DATE--13NOV70

AUTHOR-(04)-TAFELSHTEYN, E.E., PUKHOV, V.A., KOZLOV, YU.P., VLADIMIROV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--BIOL. NAUKI 1970, (2), 47-52

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

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PROXY REEL/FRAME--1996/0622

STEP NO--UR/0325/70/000/002/0047/0052

CIRC ACCESSION NO--AP0117848

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CIRC ACCESSION NO--AP0117848 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHOSPHOLIPIDS EXTD. FROM RAT SARCOMA SHOWED A DOUBLING OF THE 1550 CM PRIME NEGATIVE1 IR PEAK HEIGHT AS THE TUMOR REACHED MAX. GROWTH, AFTER WHICH THE PEAK RETURNED ALMOST TO ITS ORIGINAL HEIGHT. PHOSPHOLIPIDS FROM THE LIVER OF THE SAME RATS SHOWED A CORRESPONDING MIN. AT THE SAME STAGE OF TUMOR GROWTH. APPARENTLY AMIDES AND IMIDES ACCUMULATE IN THE SARCOMA PHOSPHOLIPIDS DURING MALIGNANT GRWOTH.

FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

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USSR

Biochemistry

UDC 547.962

VLADIMIROV, YU. A., DOBRETSOV, G. YE., and BORSHCHEVSKAYA, T. A., Chair of Biophysics, Second State Medical Institute imeni N. I. Pirogov

"Luminescence of Histones in Aqueous Solutions"

Moscow, Molekulyarnaya Biologiya, No 1, 1970, pp 9-15

Abstract: The absorption spectra (250-320 nμ) and luminescence (290-370 nμ) of four histone fractions from calf thymus was studied in aqueous solutions at pH- 2-12 and sodium chloride concentrations of 0-1.5 M. The absorption spectra corresponded to the total absorption of phenylalanine and tyrosine residues; the luminescence spectra were caused by the phenol groups of the histones. The tryptophan-containing nonhistone admixtures made some contribution to the absorption and luminescence of the F1 histone. The quantum yield of luminescence of the phenol groups peaked in 0.8 M NaCl solutions at pH 2 and at 0.13M for the F1, F2a, and F3 fractions and 0.09M for the F2b fraction. At alkaline pH, quenching of the luminescence of the F1 histone took place at the same pH values as ionization of

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VLADIMIROV, YU. A., et al., Moscow, Molekulyarnaya Biologiya, No 1, 1970, pp 9-15

the phenol groups, but at lower pH values in the case of the other histones. This difference may have been due to the interaction of the tyrosine residues in the molecules of the F2a, F2b, and F3 histones with the proton acceptors and/or to quenching resulting from the migration of energy between the phenol groups.

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Acc. Nr: AP0044688 Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1, pp 9-16

LUMINESCENCE OF HISTONES IN WATER SOLUTIONS

Vladimirov, Yu. A.; Dobretsov, G. Ye.; Borshchevskaya, T. A.

Second State Moscow High School of Medicine, USSR, Moscow

The absorption spectra (250—320 mμ) and the luminescence spectra (290—370 mμ) of four histone fractions from calf thymus have been studied in water solutions at pH 2—12 and at the concentration of sodium chloride 0—1.5 *M*. The absorption spectra corresponded to the sum of the absorptions of phenylalanine and tyrosine residues; the luminescence was connected with phenol groups of histones. Some traces of tryptophan-containing non-histone protein did contribute in the luminescence and absorption of histone F1. The quantum yield of the luminescence of phenol groups had the maximum value in

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0.8 *M* NaCl solution at pH 2 (0.13 for F1, F2a, F3 and 0.09 for F2b). At alkaline pH the quenching of luminescence of histone F1 and the phenol groups ionization took place at the sample pH values, while for the other fractions the pH values of the maximum quenching of the luminescence were lower than those of ionization. It is possible that this difference is due to interaction of tyrosine residues and proton acceptors in the histone F2a, F2b, F3 molecules and (or) to the quenching caused by energy migration in phenol groups.

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UDC 547.962

USSR

KLEBANOV, G. I., SOROKOVOY, V. I., and VLADIMIROV, YU. A., Chair of Biophysics of the Second Moscow State Medical Institute imeni N. I. Pirogov

"An Investigation of the Conformational Properties of Biological Membranes by the Protein Luminescence Method"

Moscow, Molekulyarnaya Biologiya, Vol 6, No 2, Mar/Apr 72, pp 189-195

Abstract: This article is a study of the changes which occur in the luminescence spectrum of proteins in a biological membrane when the conformation of the proteins is modified as a result of changes in the Ph and temperature of the surrounding medium.

In acid media (pH $\leqslant$ 3) and alkaline media (pH $\geqslant$ 10), when the surfaces of the membranes were positively and negatively charged, respectively, it was discovered that diffusion of light by the membranes decreased, indicating a reduction in their clustering properties. Eventually, the static repulsion of like charges caused the membranes to disintegrate. In the extreme pH ranges, a long-wave shift in the maximum of the luminescence spectrum was also observed.

When the pH of the suspensions was lowered from 7 to 4.5, the diffusion of light increased steadily, reaching a maximum at pH 4.5-5.0; this was the result of a greater clustering of the membrane particles due

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KLEBANOV, G. I., et al., Molekulyarnaya Biologiya, Vol 6, No 2, Mar/Apr 72, pp 189-198

to the equal number of positive and negative charges. This change in light diffusion was not accompanied by any change in the position of the maximum of the luminescence spectrum, indicating that the conformation of the proteins in the membranes did not change.

Suspensions of all three types of membranes used in the experiment (mitochondria and stroma of erythrocytes from rats and the membranes from the fat globules found in milk) were heated from 10° to 95°. In all cases there was a gradual long-wave shift in the maximum of luminescence, which was most pronounced in the 50°-80° interval.

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Acc. Nr. AP0023637

Abstracting Service: CHEMICAL ABST. 2-70

Ref. Code UR0191

32580s Preparing, reprocessing, and testing fire-resistant (self-extinguishing) Etrols. Malinin, L. N.; Kulakova, A. E.; Chepeleva, P. F.; Vladimirov, Yu. I.; Gavrilova, K. P.; Zhil'tsov, V. E. (USSR). *Plast. Massy* 1969, (10), 36-8 (Russ). The addn. of tris(chloroethyl) phosphate (I) to Etrols [thermoplastics based on cellulose acetate (II), cellulose acetate butyrate (III), or other cellulose esters] decreases their softening point (*F*). The addn. of ~5% ED-5, ED-6 (both epoxy resins based on diphenylolpropane and epichlorohydrin), or 3-(β-naphthyloxy)-1,2-propylene oxide increased *F* from ~180° to ~230° and reduced the wt. loss of I on heating at 200°. A compn. contg. II 100, I 14.5, di-Et phthalate 14.5, di-Me phthalate 14.5, Ph_3PO_4 8.0, and Et oleate 0.175 part and 5-7.5% (on I content) ED-5 had 450 kg cm^{-2} tensile strength at break, 19% elongation at break, and did not ignite during 30 sec exposure to an open flame. Similar compns. were prepd. from III and I contg. ED-5. The compns. are transparent, and are recommended for use in molding elec. relay covers, brackets, or plugs.

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USSR UDC 669.71.472(088.8)

VLADIMIROV, YU. M.

"Method of Connecting Flexible Bus With Head of Anode Flex of Aluminum Electrolyzer With Lateral Current Supply"

USSR Author's Certificate No 276439, Cl. 40c, 3/02, 40c, 3/12, C 22 d 3/02, C 22 d 3/12. filed 4 Apr 69, published 19 Oct 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3 G158 P)

Translation: To increase the service life of a flexible bus and mechanize the operation of wedging, the connection is effected by means of a rod passing through coaxially situated holes in the bus and the head of the flex and fastened at one end with the wedge.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 669.295.053.4

VLADIMIROVA, A. M., IL'ICHEV, V. A.

"Processing of Titanium Tetrachloride Pulp in Thin Film Evaporation Apparatus"

Tr. Vses. N-i. i Proyektn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 201-208. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G220 by the authors).

Translation: Laboratory studies of the separation of a solid suspension from $TiCl_4$ pulp by the evaporation method are performed. The technical product has a lower inpurity content than following settling, and does not require additional purification to remove Al and Fe. A large laboratory film type evaporation apparatus is designed and manufactured. It is tested under laboratory conditions using artificial pulp and in the experimental shop of one of the plants using commercial pulp. The tests show that an apparatus of this design can be successfully used for processing of various types of $TiCl_4$ for pulp, producing high quality technical product and a solid residue consisting of a dry powder. Necessary data are presented for planning of a pilot-scale apparatus. 2 figs; 5 tables.

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USSR

UDC: 621.179.16

VLADIMIROVA, D. V., MITYAYEV, V. S.

"A Device for Checking the Formation of a Fused Core in Resistance Welding"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 73, Author's Certificate No 369483, Division G, filed 24 Dec 69, published 8 Feb 73, p 127

Translation: This Author's Certificate introduces: 1. A device for checking the formation of a fused core in resistance welding. The device contains an electrode holder with ultrasonic heads located in water-filled cavities of the welding electrodes and connected to a flaw detector, which is connected in turn to control, signalling and registration units. As a distinguishing feature of the patent, inspection effectiveness is improved by making the bottom of the electrode cavity in the form of a cone with a vertex angle which provides effective transformation of the ultrasonic wave on the conical surface from longitudinal to transverse during emission and the reverse during reception. The distance between the bottom and the working surface of the electrode is chosen to depend on the angle ψ, equal to the difference between the angles of refraction and incidence of the diam-

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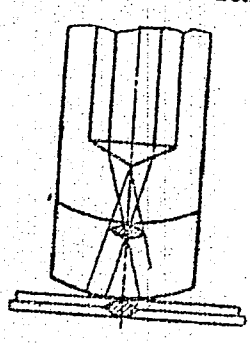
VLADIMIROVA, D. V., MITYAYEV, V. S., USSR Author's Certificate No 369483

eters of the head d and D of the core from the condition:

$$D < 2H \tan \psi < D + d.$$

2. A modification of this device distinguished by the fact that it is equipped with a time calibrator and a unit for measuring the amount of energy of the transverse ultrasonic vibrations passing through the inspection zone during welding. These additional units are connected to the flaw detector.



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USSR

UDC 669.71:539.375

LIKHACHEV, V. A., VLADIMIROVA, G. V., MYSHLYAYEV, M. M., and OLEVISKIY, S. S., Physicotechnical Institute imeni A. F. Ioffe and Institute of Solid State Physics, Academy of Sciences USSR

"Aluminum Work Hardening at Temperature Discontinuities in the Process of Creep"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 29, No 6, Jun 70, pp 1280-1287

Abstract: Results are presented of the experimental investigation of increased creep strength of metals resulting from time reduction of temperature in the process of deformation. It is observed that work hardening of metal is clearly manifested only when a considerable density of dislocation loops originates in the boundaries of blocks and near them. It is shown that work hardening involves preliminary deformation of creep, develops in time, and is sensitive to stress and temperature-velocity conditions. The nature of work hardening of metals is discussed. The authors thank V. L. Indenbom, A. N. Orlov, and V. I. Vladimirov for their interest in the work and for discussing the results.

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USSR

UDC 547.26'118

MEL'NIKOV, N. N., KRYLOVA, T. P., and VLADIMIROVA, I. L., All Union Scientific Research Institute of Chemical Plant Protective Agents

"Amidohydrazides of Thiophosphoric Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, p 1646

Abstract: A series of amidohydrazides of the thiophosphoric acid was synthesized by the reaction of nonsymmetric dimethylhydrazine with O-alkyl-N-amidochlorothiophosphates in refluxing benzene and in the presence of triethylamine. The products exhibit weak acaricidal and fungicidal properties.

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USSR

UDC 547.26'118

PROKOF'YEVA, A. F., MEL'NIKOV, N. N., and VLADIMIROVA, I. L., All-Union Scientific Research Institute of Chemicals for the Protection of Plants

"Reaction of Esters and Esteramides of Thiophosphoric Acid With Substituted Benzyl Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, pp 820-825

Abstract: At 150-170°C, 0,0'-diethyl N-ethylamidothiophosphate reacts with substituted benzyl chlorides in o-dichlorobenzene yielding the corresponding O-ethyl N-ethylamido S-benzyl thiophosphate. Symmetrical dibenzyl sulfides were also synthesized, probably as a result of the further alkylation of the S-benzyl esters of O-ethyl N-ethylamidothiophosphoric acid. O'-ethyl O-phenyl N-ethylamidothiophosphate reacts with the 4-methoxy- and 4-ethoxybenzylchloride to form the corresponding 4-alkoxybenzyl-N-ethylamine, bis(4-alkoxybenzyl)sulfide, and O-phenyl N-ethylamido S-(4-methoxybenzyl) thiophosphates. This reaction proceeds by the simultaneous attack on two nucleophillic centers. Physical data, formulas and IR and NMR constants are given for the synthesized compounds.

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USSR

UDC 547.26'118

AZIZOVA, SH. A., MEL'NIKOV, N. N., VLADIMIROVA, I. L., and NEGREBETSKIY, V. V.

"Synthesis of Mixed Esters of Phosphoric and Phosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, pp 816-820

Abstract: The title reaction was carried out by reacting β-halogenated benzoylpropionic acids with trialkyl phosphites, thereby synthesizing compounds not previously reported in the literature. The reaction can proceed via two pathways: one resulting in the phosphoric acid derivatives; the other in phosphonic acid derivatives. With trimethyl phosphite a mixture of the two types of derivatives result; but with triethyl phosphite, only derivatives of phosphoric acid were detected. Physical properties, elemental composition, and NMR data are given for the studied compounds.

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USSR

UDC 632.95

MEL'NIKOV, N. N., PROKOF'YEVA, A. F., and VLADIMIROVA, I. L.

"Method of Production of 0,0-dialkyl Benzylphosphonates"

USSR Author's Certificate No 301336, filed 11/04/69, published 11/10/71 (Translated from Referativnyy Zhurnal, Khimiya, No 9, 1972, Abstract No 9 N568 P by L. V. Razvodovskaya)

Translation: Compounds with the general formula $(RX)R'C_6H_3CH_2P(Y)(OR'')_2$ (I) (R = Me, Et, CH_2COMe; R' = H, Cl, Me; R'' = Me, Et, iso-Pr; X and Y = 0 or S) are produced by the reacting $MP(Y)(OR'')_2$ (M = alkali metal) with $(RX)R'C_6H_3CH_2Cl$ at 70-90° in an organic solvent. Three point sixty-one g $HP(P)(OEt)_2$ is added to a suspension of 0.6 g Na in 30 ml absolute toluene at 25°, then heated at 60° until the Na dissolves and a solution of 5 g 2-MeO-5-$ClC_6H_3CH_2Cl$ in 20 ml absolute toluene is added. The mixture is heated at 80° for 1 hour, cooled, the precipitate is filtered, washed with ether, the filtrate is evaporated in a vacuum, producing I (RX = 2-MeO, R' = 5-Cl, Y = 0, R'' = Et), yield 51.33%, b.p. 140-1°/0.25, $n^{20}D$ 1.5150, d_4^{20} 1.2176. Similarly produced are I (given are RX, R', R'', Y, yield in % b.p. in °C/mm, $n^{20}D$, d_4^{20}): 2-MeO, 5-Cl, Et, S, 46.4, 138-40/0.25, 1.5365, 1.2099; 2-EtO, 5-Cl, Et, S, 49, 136-8/0.22, 1.5300, 1.1812; 2-EtS, 5-Cl, iso-Pr, 0, 63, 142-5/0.14, 1.5050,

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MEL'NIKOV, N. N., et al., USSR Author's Certificate No 301336, filed 11/04/69, published 11/10/71 (Translated from Referativnyy Zhurnal, Khimiya, No 9, 1972, Abstract No 9 N567 P by L. V. Razvodovskaya)

1.1373; 2-OCH_2COMe, 5-Me, iso-Pr, O, -, -, 1.4950, -. The products I have fungicidal activity.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 632.95

MEL'NIKOV, N. N., KRYLOVA, T. P., and VLADIMIROVA, L. I.

"Method of Preparation of Substituted Amidoesters of Thiophosphoric Acid"

USSR Author's Certificate No 300471, filed 20/02/70, published 23/06/71. (Translated from Referativnyy Zhurnal Khimiya, No 8, Moscow, 1972, Abstract No 8 N583 P.)

Translation: Compounds of the general formula (RO)P(S)X(NHCOCH=CHPH) (I) (X = OR', NR', NR'_2, R and R' = alkyl) are produced in the reaction of (RO)P(S)X(NH_2) (II) with PhCH=CHOOR" (III, R" = alkyl) in the presence of an alkaline catalyst. 1.2 gm Na is added to a solution of 10 gm of (II) (R = Et, X = NMe_2) in ethyl alcohol, and heated until the sodium is dissolved. 10.4 gm III (R" = Et) (IIIa) are then added at 20°. The mixture is heated for 6 hours on an aqueous bath, C_6H_6 is added, the resulting solution is filtered, the filtrate washed with water, dried and the solvent distilled off. The yield was 9.5 gm (I) (R = Et, X = NMe_2), mp 150-1° (ethanol). (I) was prepared analogously (R, X, yield, in %, mp in °C are listed): Et, EtO, 21, 68; Bu, BuO, —, 83. To 10 gm (II) (R = Et, X = NPr_2) EtONa (from 0.6 gm Na) is added, heated for 2 hours on a water bath and then 9 gm IIIa are added and heated 4 hours on a water bath. The

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USSR

MEL'NIKOV, N. N., USSR Author's Certificate No 300471, filed 20/02/70, published 23/06/71. (Translated from Referativnyy Zhurnal Khimiya, No 8, Moscow, 1972, Abstract No 8 N583 P.)

solution is then diluted with water, the C_6H_6 is extracted and the solvent is distilled off. The yield is 1 gm of (I) (R = Et, X = NPr_2), mp 186°. (I) was prepared analogously (R, X, yield in %, mp in °C are listed): Et, NHPr, — 90-1; Et, NHMe, 27, 86; Et, NEt_2, — 163-4. (I) can be used as a pesticide.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 547.26'118

PROKOF'YEVA, A. F., MEL'NIKOV, N. N., VLADIMIROVA, I. L., and EYNISMAN, L. I., All-Union Scientific Research Institute of Chemical Plant Protection

"Organic Insectofungicides. Reaction of Substituted Benzyl Chlorides with Dialkyl and Trialkyl Phosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1702-1706

Abstract: Since there has been insufficient study of the Michaelis-Becker reaction for the synthesis of phosphonates in the case of benzyl halides, the authors undertook to study the reaction of dialkylphosphorous and thiophosphorous acid salts with benzyl chlorides containing various substituents in the benzene ring. Salts of dimethyl-, diethyl-, diisopropylphosphorous acids and diethylthiophosphorous acid were used as the nucleophilic agent. The reaction, conducted in absolute toluene at 70-90° for 3-10 hours, gives O,O-dialkyl benzylphosphonates. The principal processes occurring in such polar solvents as methanol, methanol-water, methanol-toluene, dioxane-water are methanolysis or hydrolysis of the initial benzyl chlorides. 5-chloro-2-methoxy(2-ethoxy)benzyl chlorides in methanol-water are converted into corresponding benzyl alcohols. The reaction of benzyl chlorides with sodium diethylthiophosphite gives benzylthiophosphonates. Biological studies show that the synthesized O,O-dialkyl benzylphosphonates possess fungicidal properties.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

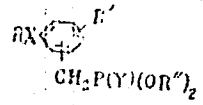
UDC: 547.26.118.07

MEL'NIKOV, N. N., PROKOF'YEVA, A. F., VLADIMIROVA, I. L.

"A Method of Synthesizing O, O-Dialkyl Benzyl Phosphonates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 14, May 71, Author's Certificate No 301336, Division C, filed 21 Apr 69, published 21 Apr 71, p 67

Translation: This Author's Certificate introduces a method of synthesizing O, O-dialkyl benzyl phosphonates of the general formula



where R is CH_3, C_2H_5, CH_2COCH_3; R' is H, Cl, CH_3; R" is CH_3, C_2H_5, iso-C_3H_7; X and Y are O, S. As a distinguishing feature of the patent, salts of dialkylphosphorous or dialkylthiophosphorous acid are allowed to react with chloromethylated aromatic esters in an inert organic solvent in the presence of heat with the subsequent isolation of the product by conventional methods. The patent also covers a modification of the method distinguished by the fact that the process is carried out at 70-90°C.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 547.26'118

MEL'NIKOV, N. N., KRYLOVA, T. P., and VLADIMIROVA, I. L.

"Reaction of Aminothiophosphate Esters With Acrylate Esters"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1984-1987

Abstract: Previous research indicates that aminothiophosphate esters react with acrylonitrile to form addition products at the double bond. The reaction of aminothiophosphates with cinnamate esters yields acylated compounds. This work deals with the reaction of amino thiophosphates with acrylate esters. Monoamino-dithiophosphate esters when treated with methyl acrylate and methyl methacrylate yield addition products at the double bond, contrary to Markovnikov's rule. The course of the above reaction depends on the structure of both the ester and the amine radical.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 632.95

VLADIMIROVA, T. I., GRAPOV, A. F., MANDEL'BAUM, YA. A., and MEL'NIKOV, N. N.

"Fungicidal Mixed Ester-amides and Diamides of Thio- and Dithiophosphoric and Phosphonic Acids"

V sb. Khimiya i primeneniye fosfororgan. soyedin. (Chemistry and Application of Organophosphorus Compounds -- Collection of Works), Moscow, "Nauka," 1972, pp;449-476 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N485 by T. A. Belyayeva)

Translation: The authors synthesized ester-amides of thiophosphoric acid amides and hydrazides of O-alkyl-S-aryldithiophosphoric acid, ester-amides of methyl-, chloromethyl- and trichloromethylphosphonic acids, O-alkyl N, N'-diaryldiamidothiophosphates, O-alkyl N-alkyl-N'-aryldiamidothiophosphates, amides of thiophosphonic acids, dithiocyclodiphosphazanes, and diamides of methylphosphonic acid, in order to study their fungicidal activity. Ester-amides of methylphosphonic acid, although containing groups capable of participating in redox processes, suppress the growth of fungal organisms weakly. Derivatives of thiophosphoric and thiophosphonic acids showed significant fungicidal activity. S-Aryl amidodithiophosphates possess the highest fungicidal activity. The fungicidal activity of the preparations usually rises with an increase of the radical at the nitrogen from C_1 to C_4.

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USSR UDC: [537.226+537.311.33]:[539.3+536.21+536.631+536.651]

POPOV, V. A., MANZHELIY, V. G., and VLADIMIROVA, L. I.

"Thermal Capacitance of Ammonium Deuteride Solids"

Tr. Fiz.-tekhn. in-t nizk. temperatur AN USSR (Transactions, Physico-Technical Institute of Low Temperatures, Ukrainian Academy of Sciences) 1971, No. 12, pp 18-23 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E832)

Translation: The heat capacitance of solid ND_3 in the temperature interval of 2-197° K as well as the melting enthalpy H_{tr} and the temperature T_{tr} corresponding to the triple point of ND_3 are determined. The contributions of the various forms of the molecular thermal movement in the heat capacity are analyzed. The enthalpy of the formation of orientation defects in solid ND_3 is determined. A discussion is given of the temperature dependence of the thermal capacitance. Bibliography of 16.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

Microbiology

USSR

UDC 582.251.001.57

TSOGLIN, L. N., VLADIMIROVA, M. G., and SEMENENKO, V. Ye., Institute of Plant Physiology imeni K. A. Timiryazev, Academy of Sciences USSR, Moscow

"Mathematical and Experimental Modeling of the Process of Autoselection of Microalgae in Continuous Culture"

Moscow, Fiziologiya Rasteniy, Vol 17, No 6, Nov/Dec 70, pp 1129-1139

Abstract: A mathematical analysis was made of the dynamics of growth of a multicomponent population of microalgae. A theoretical basis was developed for automatic competitive selection, and it was demonstrated that productive strains to suit predetermined conditions can be obtained in continuous culture. The theory was tested in a study of the dynamics of growth and change in correlation of forms in a multicomponent population consisting of Chlorella sp. K, Chlorella CO-10, Scenedesmus obliquus 125, and Chlorella vulgaris 7-23-1. Continuous cultivation was carried out at densities corresponding to the different growth stages (exponential and linear) and at various original concentrations of the strains. When the cultures were transferred from less active conditions to a reactor with a high intensity of external parameters, the change in the specific rate of multiplication

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USSR

TSOGLIN, L. N., et al, Fiziologiya Rasteniy, Vol 17, No 6, Nov/Dec 70, pp 1129-1139

was found to lag behind the change in photosynthetic activity by a time interval equal to the period of generation of a given strain. Differences in the average size of cells of strains forming part of the population had no effect on the kinetics of selection. Study of CO_2 exchange in the process of autoselection revealed increased photosynthesis by the multicomponent population due to a change in its qualitative composition. The experimental findings were consistent with the theoretical calculations in both the exponential and linear stages of growth.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR UDC 541.15

KULIKOV, I. A., and VLADIMIROVA, M. V.

"Radiation Induced Oxidation of Fe^{++} Ions in Nitrate Solutions"

Moscow, Khimiya Vysokikh Energiy, Vol 7, No 4, Jul-Aug 73, pp 348-353

Abstract: Radiation induced oxidation of Fe^{++} has been investigated in sulfuric acid solution containing NO_3^- ions and in nitric acid solution ($[NO_3^-] = 10^{-3}$ -- 0.5 M), with a Co^{60} γ-irradiation. The yields of Fe^{3+} ions and HNO_2 molecules formed in aerated and non-aerated solutions have been determined. It was established that the oxidation of Fe^{2+} occurs in reactions with OH, HO_2 and NO_2 radicals as well as H_2^+ ions and H_2O_2. An increase in the concentration of No_3^- ions in the solutions from 10^{-3} to 0.1 M leads to an increased yield in the oxidation of Fe^{2+}. A mechanism has been proposed for the radiolysis of nitrate solutions containing Fe^{++}.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

1/2 029 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--NEW CHEMICAL METHOD FOR DETERMINING THE DOSE RATE OF VARIOUS TYPES OF RADIATION -U-

AUTHOR-(02)-VLADIMIROVA, M.V., KULIKOV, I.A.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(5), 429-31

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--DOSE RATE, GAMMA IRRADIATION, DOSIMETRY, ELECTRON ACCELERATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0585 STEP NO--UR/0089/70/028/005/0429/0431

CIRC ACCESSION NO--AP0137670

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

2/2 029 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137670

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROPOSED USE OF 4.0M HNO SUB3 SOLN. FOR DETG. THE DOSE RATE OF VARIOUS TYPES OF RADIATION IS BASED ON THE EARLIER REPORTED RADIATION DOSE DEPENDENCE OF THE YIELD OF HNO SUB2 IN THE GAMMA RADIOLYSIS OF HNO SUB3 (M. V. VLADIMIROVA, I. A. KULIKOV, YU. I. SAVEL'EV, 1969). A PROLONGED GAMMA IRRADN. OF 2-8M HNO SUB3 SOLNS. LEADS TO THE ESTABLISHMENT OF A CONST. CONCN. OF HNO SUB2, WHICH DEPENDS ON THE CONCN. OF HNO SUB3 AND THE TEMP. THUS, THE ACCURACY OF THIS METHOD DEPENDS OF THE ACCURACY OF THE MEASUREMENTS OF HNO SUB3 CONCN. AND TEMP. THE METHOD WAS VERIFIED BY STUDYING THE DOSE DEPENDENCE OF HNO SUB2 CONCN. USING AN ELECTRON ACCELERATOR AND THE WWR REACTOR. THE USE OF THE PROPOSED HNO SUB3 DOSIMETER IS NOT RECOMMENDED FOR DOSE RATES SMALLER THAN 10 PRIME3 RADS-SEC, BECAUSE IT REQUIRES A LONG IRRADN. PERIOD. THIS DISADVANTAGE MAY BE BENEFICIAL IN THE CASE OF A PROLONGED REACTOR CYCLE. THE PROPOSED METHOD IS INDEPENDENT OF THE KIND OF RADIATION. IT IS RECOMMENDED FOR MEASURING DOSE RATES GREATER THAN 5 TIMES 10 PRIME3 RADS-SEC WITH MIN. IRRADN. TIME OF 3 HR; FOR DOSES 10 PRIME4-10 PRIME6 RADS-SEC THE IRRADN. TIME IS 2-0.5 HR. THE ACCURACY OF THE DOSIMETRY VALUES VARIES BETWEEN 10 AND 15PERCENT.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

VLADIMIROVA, N. A.

JPRS 55382

4 May 1972

UDC 621.039.554:621.311.25:621.039

STUDY OF THE BUILDUP OF PLUTONIUM ISOTOPES IN THE FUEL OF THE VVER-1 REACTOR OF THE NOVO-VORONEZHSKIY ATOMIC POWER STATION

[Article by V. Ya. Gabeskiriya, V. S. Belokopytov, O. A. Miller, G. A. Simakin, L. I. Burnyakov, Z. I. Fakhomov, N. A. Vladimirova, and I. V. Matyashchuk, Scientific Research Institute of Atomic Reactors; Melekess, Issledovaniye nakopleniya izotopov plutoniya v toplive Reaktora VVER-1 Novo-Voronezhskov AES, Russian, NIIAR P-68, 1970, printing 220 copies, signed to press January 1970, 16 pp]

Introduction

The isotopic composition of irradiated fuel in samples cut from fuel elements of the VVER-1 reactor of the Novo-Voronezhskiy Atomic Power Station was investigated in order to determine experimentally the isotopic composition of irradiated fuel in a reactor of the VVER type within the framework of contract no. 577/RB with the International Atomic Energy Agency. The tasks of this study were:

(a) determining the uranium and plutonium isotopic composition after irradiation of the fuel;

(b) determining the number of plutonium isotopes formed as a result of irradiation;

(c) determining the isotopic composition of the fuel as a function of the degree of burn-up.

1. Preparation of Samples

The assembly from which the fuel element was taken was irradiated for 2.75 years and held for 1.5 years before the investigation.

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Superalloys

USSR

UDC 539.67

VLADIMIROVA, N. N., GLOTOVA, L. S., GORFINKEL', V. B., DUNAYEV, F. N., LOBANOVA, N. B., and YAKOVLEV, G. P.

"Effect of Magnetic Structure on Internal Friction of Nickel and Ferronickel Alloys"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 187-191

Abstract: The effect of tensile stresses and heat treatment on the ferromagnetic internal friction of nickel, permalloy-66, and permalloy-50 is studied.

It is shown that the effect of external static tensile stresses on internal friction and vibration period depends on both the magnitude and sign of saturation magnetostriction of a given material. Hysteresis of the logarithmic decrement δ and of vibration period T was experimentally revealed from the magnitude of tensile stresses.

The effect of heat treatment for 66%Fe, 80%Ni alloys was determined. The magnetic structure obtained as a result of heat treatment affects the internal friction. 4 figures, 3 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

1/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--RADIATION CATALYTIC ACTIVITY OF DIAMOND AND GRAPHITE -U-

AUTHOR-(05)-VLADIMIROVA, V.I., ZHABROVA, G.M., KADENATSI, B.M., KRIVENKOVA, P.G., BUTUZOV, V.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 182-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--CATALYST ACTIVITY, DIAMOND, GRAPHITE, METHANOL, GAMMA RADIATION, FORMALDEHYDE, ETHYLENE GLYCOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0748 STEP NO--UR/0456/70/004/002/0182/0183

CIRC ACCESSION NO--AP0119655

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

2/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119655

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIAMOND AND GRAPHITE WERE STUDIED TO DET. THEIR ACTIVITY IN DIFFERENT ELECTRONIC CONFIGURATIONS. SYNTHETIC AND NATURAL DIAMONDS WERE USED. THE SURFACE OF ALL SAMPLES WAS INCREASED BY VIBRATION GRINDING. THE SAMPLES WERE PURIFIED WITH HCL AND DRIED AT 120DEGREES. THE RADIATION CATALYTIC ACTIVITY WAS DETD. BASED ON THE TRANSFORMATION OF MEOH TAKING PLACE IN AN ABSORBED LAYER AT ROOM TEMP. THE SAMPLES WERE DEGASSED AT 400DEGREES AND MEOH VAPORS WERE ADSORBED ON THEM BY COOLING THEM TO ROOM TEMP. THEN THE SAMPLES WERE IRRADIATED WITH PRIME60 CO GAMMA RAYS, AND THE PRINCIPAL PRODUCTS FORMED WERE CH SUB2 O AND ETHYLENE GLYCOL. THE TOTAL PRODUCTS FORMED EXCEEDED BY A FACTOR OF 100 THE TOTAL OBTAINED BY THE HOMOGENEOUS RADIOLYSIS OF MEOH. THUS DIAMONDS WITH A WIDTH OF THE FORBIDDEN BAND OF 7 EV TRANSFER ENERGY WELL. NO DIFFERENCE IN ACTIVITY WAS FOUND BETWEEN SYNTHETIC AND NATURAL DIAMONDS. GRAPHITE DID NOT TRANSFER THE ABSORBED ENERGY.

FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

Materials

USSR

UDC 539.3.551.243

VLADIMIROVA, V. L., and LAVRENT'YETV, F. F.

"The Temperature Dependence of the Yield Point of Hexagonal Metals at Low Temperatures"

Khar'kov, Fiz. Mekhanizmy Plastich. Deform. pri Nisk. Temperaturakh -- Sbornik (The Physical Mechanisms of Plastic Deformation at Low Temperatures -- Collection of Works), 1971, pp 7-10 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V472 by L. I. Mirkin)

Translation: An investigation is made of the influence of the temperature, purity, and deformation rate upon the critical shear stress in monocrystals of zinc (99.999 and 99.99%), cadmium (99.98%), and magnesium (99.99%). The initial density of the dislocations is determined; depending upon the crystal purity, this comprises from 10^4 to 10^7 cm^{-2}. Deformation was carried out by simple shear and by compression in planes 0001 and directions 1120 at rates from 8×10^{-4} to 2×10^{-2} and at temperatures from 1.4 to 300°K. The result was obtained, that in crystals of high purity virtually no relationship exists between the critical shear stress and the temperature. In crystals of lesser purity, an anamolous relationship appears between the critical shear stress and the temperature (increase of the critical shear stress with a temperature

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

VLADIMIROVA, V. L., and LAVRENT'YETV, F. F., Fiz. Mekhanizmy Plastich. Deform. pri Nizk. Temperaturakh -- Sbornik, 1971, pp 7-10

decrease in the interval of 300-40° K, and a decrease of the critical shear stress with a temperature decrease from 40 to 1.4° K). Analysis of data of the change of dislocation mobility in relation to the temperature showed that constancy of the critical shear stress may be linked to simultaneous matching of increase of the rate and decrease of the density of the dislocations. The observed relationship of the critical shear stress to the temperature in crystals of lesser purity is linked to an infraction of this matching, due to the presence of admixtures. Furthermore, the dislocation rate is not a function of purity; the entire change is linked to the decrease of density of the mobile dislocations. For magnesium crystals, the relationship of the critical shear stress to the temperature is considerably affected by the deformation rate. Other conditions being equal, an increase of the deformation rate brings about an increase of the critical shear stress. A linear relationship of the critical shear stress to the logarithm of the deformation rate is observed at all temperatures, and as the temperature decreases, there takes place a parallel shift of the straight line into the region of higher critical shear stresses. At zero stress the activation energy equals 5×10^{-2} ev, at temperatures of 300 and

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USSR

VLADIMIROVA, V. L., and LAVRENT'YETV, F. F., Fiz. Mekhanizmy Plastich. Deform. pri Nizk. Temperaturakh -- Sbornik, 1971, pp 7-10

$77^{o}K$ the activation volume equals 3.4×10^{-20} and 1×10^{-20} cm^3 respectively; the obtained parameters are linked to the surmounting of basal dislocations of the point admixture defects.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

1/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ROLE OF FOREST TYPE DISLOCATIONS IN THE PLASTIC DEFORMATION OF ZINC SINGLE CRYSTALS -U-

AUTHOR-(02)-LAVRENTYEV, F.F., VLADIMIROVA, V.L.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1), 150-6

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--CRYSTAL DISLOCATION, ZINC, PLASTIC DEFORMATION, HIGH PURITY METAL, TWINNING, METAL SINGLE CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0688 STEP NO--UR/0126/70/029/001/0150/0156

CIRC ACCESSION NO--AP0105664

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

2/2 025 UNCLASSIFIED

CIRC ACCESSION NO--AP0105664 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE D. OF FOREST DISLOCATIONS IN THE (BAR 1122) (BAR 1123) SYSTEM ON PARAMETERS OF THE STRENGTHENING CURVE DURING SHEAR IN THE (0001) (BAR 1120) SYSTEM OF 99.99PERCENT PURE ZN CRYSTALS AT 293DEGREES K, WAS INVESTIGATED. THE FLOW STRESS, THE STRENGTHENING COEFF., AND THE TIME OF THE EARLY STAGE VARY SIGNIFICANTLY WITH INCREASED D. OF FOREST DISLOCATIONS. EXPRESSIONS WERE OBTAINED FOR THE CHANGES OBSD. AT FOREST DISLOCATION DS. OF 1 TIMES 10 PRIME3 TO 3 TIMES 10 PRIME6 CM PRIME NEGATIVE2, THE DAMPLING OF THE DISLOCATION MOTION IS THE MECHANISM DETG. THE STRENGTHENING, WHEREAS AT GREATER THAN 3 TIMES 10 PRIME6 CM PRIME NEGATIVE2 THE STRENGTHENING IS CONTROLLED BY THE DISLOCATION MULTIPLICATION PROCESS. THE MULTIPLICATION THEREBY HAS A DISCRETE NATURE WHICH MANIFESTS ITSELF IN JUMP LIKE DEFORMATION. THE CRIT. SHEAR STRESS AND THE FLOW STRESS VALUES AT THE EASY SLIP STAGE ARE CAUSED BY THE SAME MECHANISM, NAMELY BY ELASTIC INTERACTION OF THE DISLOCATIONS IN THE (0001) (BAR 1102) SYSTEM WITH DISLOCATIONS IN THE (BAR 1122) (BAR 1123) SYSTEM, WITH THE FORMATION OF RECOMBINATION SEGMENTS FORMED BY SESSILE DISLOCATIONS. THE TWINNING PROCESS WHICH, AS A RULE, PRECEDES FRACTURE, SHIFTS TOWARDS THE REGION OF LESSER DEGREES OF DEFORMATION WITH INCREASING FOREST DISLOCATION D. SUCH AN INTERACTION CAN LEAD TO THE APPEARANCE OF DISLOCATIONS, THE BURGERS VECTOR (BAR 1011) OF WHICH LIES IN THE (BAR 1012) TWINNING PLANE, I.E. SUCH A REACTION CAN SERVE AS THE SOURCE OF TWINNING DISLOCATIONS.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

Single Crystals

USSR

UDC 669.5.548.4:539.4

LAVRENT'YEV, F. F., and VLADIMIROVA, V. D., Physicotechnical Institute of Low Temperature, Academy of Sciences, Ukr SSR

"The Role of Forest Dislocation in the Plastic Deformation of Zinc Single Crystals"

Sverdlovsk, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 150-156

Abstract: The role of forest dislocation in the plastic deformation of zinc single crystals was studied. The effect of forest dislocation density ρ_f in the {1122} $\langle 1123 \rangle$ system on parameters of the work-hardening curve for displacement in the (0001) $\langle 1120 \rangle$ zinc crystal system (99.99%) at a temperature of 293°K was investigated. The forest dislocation density varied from 10^3 to $10^7 cm^{-2}$. It is shown that the flow stress τ_t, the hardening modulus at the A stage $\Theta_a = d\tau/d\varepsilon$, and the extent of the A stage $a_A = d\varepsilon/\varepsilon$ vary substantially with increasing forest dislocation density. The flow stress is described by the relation $\tau_T = \tau_\varepsilon + aGB\rho_f^{1/2}$, where τ_ε is the stress at $\rho_f = 0$ for ε deformation; G is the displacement modulus; b is the Burgers vector; and $a = 1.9$ is the slope coefficient.

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USSR

LAVRENT'EV, F. F. et al., Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 150-156

The θ (ρ_f) dependence is described by the deformation curve with a maximum, while a_A(ρ_f) decreases monotonically down to zero at $\rho_f = 10^7 cm^{-2}$. The variation of the above-mentioned parameters is tentatively explained by the change of controlling mechanisms hindering the dislocation multiplication. In the range of ρ_f from 1×10^3 to $3 \times 10^6 cm^{-2}$, the dislocation movement is hindered by the controlling mechanism determining the work-hardening, while from $3 \times 10^6 cm^{-2}$ and up the work-hardening is controlled by the dislocation multiplication. The microstructures of zinc crystals with consecutively increasing dislocation density in the {1122} <1123> system from 8×10^3 to $\sim 10^7 cm^{-2}$ are presented. Orig. art. has: 5 figures.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 576.895.771-095.18:615.285.7:632.936.3

POTAPOV, A. A., and VLADIMIROVA, K. V., Entomology Section, Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Ministry of Health USSR, Moscow

"The Mechanism of Action of Repellent Fumes on Mosquitoes and Other Blood-Sucking Insects. Communication 4"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyy Bolezni, Vol 39, No 6, 1970, pp 718-722

Abstract: The sensitivity of mosquitoes and horseflies to the fumes of such repellents as furan-2-caroboxylic acid diethylamide (P-320), benzoic acid diethylamide (P-2), etc. is closely related to the insects' vital processes, particularly to the intensity of respiration and gas exchange. They are most active when the temperature and relative humidity are optimum and therefore react most sharply to repellents. The repellent effect is possible only in close propinquity to the surface treated with the substance, i.e., at fairly high concentrations of fumes in the air. This determines the amount of fumes that may penetrate into the traches and the degree of irritation of the insects' olfactory receptors. The meteorological and other conditions intensifying physiological functions (respiration

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POTAPOV, A. A., and VLADIMIROVA, V. V., Meditsinskaya Parazitologiya i Parazitarnyy Bolezni, Vol 39, No 6, 1970, pp 718-722

and gas exchange in particular) also increases the sensitivity of insects to repellents. Repellents resemble insecticides in this respect.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

1/2 009 UNCLASSIFIED

TITLE--SUSCEPTIBILITY OF MOSQUITOES TO REPELLENTS IN RELATION TO THEIR PHYSIOLOGICAL STATE. COMMUNICATION II -U-

PROCESSING DATE--18SEP70

AUTHOR--VLADIMIROVA, V.V.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLEZNI, 1970, VOL 39, NR 1, PP 49-53

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INSECT REPELLANT, MOSQUITO

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0086 STEP NO--UR/0358/70/039/001/0049/0053

CIRC ACCESSION NO--AP0103766

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2/2 009 UNCLASSIFIED

CIRC ACCESSION NO--AP0103766 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ORDER TO PREPARE EFFECTIVE REPELLENT DRUGS AGAINST BLOOD SUCKING INSECTS IT IS NECESSARY TO KNOW HOW GREATLY THEIR REACTION TO THE DRUGS CHANGES DEPENDING UPON PHYSIOLOGICAL CONDITION. THIS PROBLEM AT PRESENT HAS BEEN LITTLE STUDIED. THE PAPER PRESENTS THE RESULTS OF EXPERIMENTS DETERMINING THE SENSITIVITY OF MOSQUITO POPULATIONS TO VAPOURS OF REPELLENTS IN RELATION TO THE SEXUAL STATE, AGE, STATE OF FEEDING AND WATER BALANCE. THE TESTS WERE CARRIED OUT BY MEANS OF OLFACTOMETER IN AEDES AEGYPTI L., AEDES VEXANS MEIG., ANOPHELES MACULIPENNIS MEIG. MOSQUITOES. FEMALE MOSQUITOES REACTED TO REPELLENTS MORE ACUTELY THAN MALES. FOR FEMALE AE. AEGYPTI THE HIGHEST SENSITIVITY WAS OBSERVED AT THE AGE OF ABOUT 3 WEEKS. REPELLENTS AFFECTED ENGORGED FEMALES GREATER THAN EMPTY FEMALES. SENSITIVITY OF MOSQUITOES TO REPELLENT VAPOURS REDUCED WITH A DECREASE IN THE CONTENT OF WATER IN THEIR BODIES. ACCORDINGLY, RESPONSE OF MOSQUITOES TO REPELLENTS IS CLOSELY RELATED WITH THEIR ACTIVITY AND DEPENDS UPON THE CHARACTER OF FEEDING, WATER BALANCE AND AGE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 678.674.004.14:621.397

SEDOV, L. N., VLADIMIROVA, Z. V., SAPOZHNIKOVA, YE. L., MAKEYEVA, A. A., SEMENOV, L. G., MAK-MILLIN, D. M., BAKANOV, YU. A., DIDZHYULENE, D. I., MALKINA, F. S., and ZHLABIS, S. B.

"Polyester Hermetic-Sealing Compounds"

Moscow, Plasticheskiye Massy, No 6, 1970, pp 61-62

Abstract: The authors studied compounds for the hermetic sealing of horizontal output transformer coils for television receivers. These compounds should have low viscosity in the initial state and a high hardening rate up to 100°C. In the hardened state they should possess self-extinguishability, water resistance, good mechanical and electric insulation properties, and stability of properties up to 120°C. The principal components chosen were polyester resins PN-1 and PN-69. Because of the requirement of self-extinguishability, special additives (antimony trioxide and chlorine- or fluorine-containing polymers) were introduced into the resins. In addition, mineral fillers (talc, mica, powdered quartz, titanium dioxide, powdered silica gel, etc.) were added to give the sealing compounds

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

SEDOV, L. N., et al, Plasticheskiye Massy, No 6, 1970, pp 61-62

the requisite viscosity and to lower their cost. The article gives data on the hermetic sealing process. These self-extinguishing compounds are being used for the hermetic sealing of horizontal output transformers for black-and-white (1 class) and color television sets and viewing monitors.

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USSR

UDC 632.911.2

POLYAKOV, I. M., and VLADIMIRSKAYA, M. YE., All-Union Institute of Plant Protection

"Laboratory Methods of Testing Soil Fungicides (A Survey of the Literature)"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 3, Mar 70, pp 36-42

Abstract: The article presents a critical analysis of various methods used for determining the fungicidal activity, radius of toxic action and persistency of soil fungicide. In the authors' view, none of the methods gives a comprehensive idea about the action of preparations on certain soil pathogenic fungi (test objects) so as to permit a judgment on the suitability of a preparation for soil fumigation. The article describes a method developed by the authors for studying the activity of fumigants towards pathogenic fungi, using Rhizoctonia solani (8- to 10-day culture) and Fusarium oxysporum of any form (lycopercici cucumerinum, conglutinans, 15- to 18-day culture) as the bioobjects. The method makes it possible to determine the minimum toxic dose of a preparation which causes the total destruction of the bioobject, as well as to establish the radium of toxic action of the preparation in this dose, its persistency in the soil and its phytocidity to plants. New chemicals are used in a dose of 100 mg per kg of soil for the

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USSR

POLYAKOV, I. M. and VLADIMIRSKAYA, M. YE., Khimiya v Sel'skom Khozyaystve, Vol 8, No 3, Mar 70, pp 36-42

initial evaluation of their fungicidal activity towards Rhizoctonia solani, 500 mg for Fusarium oxysporum. If a preparation displays fungicidal activity, it is subsequently tested in lower doses. Tests are conducted at 20-22, 10-12 and 4-5° C and are repeated three times.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 632.911.2

POLYAKOV, I. M., and VLADIMIRSKAYA, M. YE., All-Union Institute of Plant Protection

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Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 3, Mar 70, pp 36-42

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USSR

POLYAKOV, I. M. and VLADIMIRSKAYA, M. YE., Khimiya v Sel'skom Khozyaystve, Vol 8, No 3, Mar 70, pp 36-42

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

Thermomechanical Treatment

USSR

UDC 669.24:539.4

BERNSHTEYN, M. L., VLADIMIRSKAYA, T. K., LAPTEV, D. V., and CHUYAN, A.M.,
Moscow Institute of Steel and Alloys

"Stability of the Thermomechanical Strengthening Effect in Gonzo Nickel Steel"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 2, Feb 73, pp 403-408

Abstract: The effect of repeated heating after prior thermomechanical treatment on the properties and structure of austenite and martensite was studied for 60N20 steel which had the following chemical composition (in %): 0.61 C, 20.44 Ni, 0.11 Mn, 0.18 Si, 0.010 S, and 0.001 P. Temperatures of the direct M_s and inverse A_s martensite transformation were -35 and +420°C, respectively. Results of mechanical tests and electron microscopy examinations showed that the effect of thermomechanical strengthening is preserved during the repeated heatings to 650 and 950°C, followed by quenching, because the accelerated heating promotes growth in the strength properties of the austenite and martensite as a result of phase cold hardening. The morphological features, forming in the austenite during repeated quenching, are the result of the reverse alpha-gamma transformation. In austenitic samples, subjected to high-temperature thermomechanical treatment with repeated quenching, preservation of the developed polygonal

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USSR

BERNSHTEYN, M. L., Fizika Metalloy i Metallovedeniye, Vol 35, No 2, Feb 73, pp 403-408

structure can be observed. Dislocation structures formed in the austenite are caused by the combined action of thermomechanical treatment and phase cold hardening during the gamma-alpha-gamma transformation. 5 figures, 6 bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 669.292.018.8.669.295

ANDREYEVA, V. V., STEPANOVA, T. P., DRUZHININA, I., VLADIMIRSKAYA, T. M.

"Influence of Titanium on Corrosion Resistance and Physical-Mechanical Properties of Vanadium"

Nauchn. Tr. N-i. i Proyektn. In-t. Redkomet. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 175-181. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I706 by the authors).

Translation: Results are presented from studies of the physical and mechanical properties, structure, corrosion resistance, and electrochemical behavior of alloys in the system V-Ti with 10-90% Ti content. 4 figs; 3 tables; 4 biblio refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

1/2 020 UNCLASSIFIED

TITLE--KINETIC ANALYSIS OF LEUKEMIC HYPERPLASIA IN ACUTE LEUKEMIA -U- PROCESSING DATE--16OCT70

AUTHOR--VLADIMIRSKAYA, YE.B.

COUNTRY OF INFO--USSR

SOURCE--PROBL GEMATOL PERELIV KROVI 15(1), 20-27. ILLUS. 1970

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LEUKEMIA, LEUKOCYTOSIS, HYPERPLASIA, LEUKOPOIESIS, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0249 STEP NO--UR/9080/70/015/001/0020/0027

CIRC ACCESSION NO--AP0117501

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

2/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117501

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DATA WERE ANALYZED CONCERNING PROLIFERATION AND DIFFERENTIATION OF LEUKEMIC CELLS IN ACUTE LEUKOSIS. THE LEADING CAUSE OF HYPERPLASIA IN ACUTE LEUKOSIS IS AN INCREASE IN THE NUMBER OF MITOTIC CYCLES PASSED BY LEUKEMIC CELLS CAPABLE OF DIVISION, WITH RETENTION OF NORMAL RATE OF REPRODUCTION. THE PRINCIPAL PECULIARITY OF LEUKEMIC POPULATION IN ACUTE LEUKOSIS IS ITS UNHOMOGENEITY, I.E. DIVISION INTO DIVIDING AND NONDIVIDING SUBPOPULATION. THE FORM AND THE COURSE OF ACUTE LEUKOSIS LARGELY DEPENDS ON INTERRELATIONS BETWEEN THESE 2 LEUKEMIC SUBPOPULATIONS. FACILITY: CLIN. HEMATOL. LAB., INST. PEDIAT., ACAD. MED. SCI. USSR, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC 66.012.1

NOVIKOV, YU. S., VLADIMIRSKIY, M. M.

"A Device for Checking Variation in the Standard Deviation of a Random Variable"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 4, 1970, p 99, patent No 260970, filed 12 May 68

Abstract: This Author's Certificate introduces a device for checking variation in the standard deviation of a random variable. The device contains two flip-flops, an electronic switch, two AND circuits, and a reversible binary counter. As a distinguishing feature of the patent, the device is simplified by connecting the resent terminal of the first flip-flop and the set terminal of the second flip-flop to the first input terminal, connecting the set terminal of the first flip-flop through the electronic switch to the second input terminal, connecting the counter input of the second flip-flop to the third input terminal, and connecting the first inputs of the AND circuits to the fourth input terminal. The second input of the first AND circuit is connected to the zero-output terminal of the first flip-flop,

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USSR

NOVIKOV, YU. S., et al., Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 4, 1970, p 99, patent No 260970, filed 12 May 68

the second input of the second AND circuit is connected to the set terminal of the first flip-flop, the inhibit inputs of the AND circuits are connected to the electronic switch input and the zero-output terminal of the second flip-flop, and the outputs of the first and second AND circuits are connected to the adding and subtracting inputs respectively of the reversible counter.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

UDC: Δ 539.1.073/.074

VLADIMIRSKIY, V. V., KOROL'KOV, I. Ya., NOVIKOVA, N. V., and NOZDRACHEV, V. N.

"A Method of Filmless Information Recording From Wire Spark Chambers in a Strong Magnetic Field"

Moscow, Pribory i Tekhnika Eksperimenta, No 5, 1973, pp 55-56

Abstract: The basic idea of this method is the recording of ultrasonic oscillations arising from the interaction of a current induced in a sonic conductor with an external magnetic field. The present article explores the use of the electrodynamic method, with an intense magnetic field, in the filmless information recording system, based on this idea, involving wire spark chambers with ferrite and magnetostriction information recording. The exploration was first conducted with models and then on a mock-up of the wire spark chamber measuring 1200X650 mm^2, filled with a Ne+He mixture, in a magnetic field with an induction of 18 kilogauss. This method was found to have a high sensitivity and is capable of use with magnetic fields stronger than 1 kiloersted, a field intensity at which other methods are ineffective.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

(18)

BALOSHIN, O. N., BLAGORODOV, A. M., BOLONKIN, B. V., VLADIMIRSKIY, V. V., GORIN, YU. P., GRIGOR'YEV, V. K., GRISHIN, A. P., YEROFEYEV, I. A., KOROL'KOV, I. YA., LUZIN, V. N., MILLER, V. V., NIKOLAYEVSKIY, YE. S., PETRUKHIN, V. N., PLIGIN, YU. S., PONOMAREV, L. A., SIROTKIN, S. M., SOKOLOVSKIY, V. V., TARASOV, YE. K., TIKHOMIROV, G. D., TROSTINA, K. A., TURCHANOVICH, L. K., and SHKURENKO, YU. P., Institute of Theoretical and Experimental Physics GKI AE (State Committee for the Use of Atomic Energy)

"The $K^- p \rightarrow \bar{K}^0 n$ Charge Exchange Reaction at a Pulse of 39 Gev/sec"

Moscow, Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544

Abstract: The authors present the measurement results from studying the charge exchange reaction of K^--mesons on protons ($K^- p \rightarrow \bar{K}^0 n$) at a pulse of 39 Gev/sec. The study was carried out using the ITEP 6-m magnetic track spectrometer. The working volume of the magnetic field of the spectrometer was 1.0 x 1.5 x 6 m . Twelve optical spark chambers were located inside the magnet, with each chamber having eight spark gaps (10 mm each). The chamber electrodes consisted of two layers of aluminum foil 14 microns thick. The photographs were taken through a special slit in the magnet yoke. A mirror system made it possible to obtain three stereoprojections of all of the chambers

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USSR

(18)

BALOSHIN, O. N., et al., Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544

with one camera. The reaction was studied on the negative particle beam of the IFVE accelerator. The K^--mesons were distinguished by a differential Cerenkov counter. The beam was focused on a liquid hydrogen target 40 cm long which was set approximately three meters from the first chamber of the spectrometer. Approximately $5 \cdot 10^7$ K^--mesons were passed through the equipment and 1020 photographs taken. Pairs of uniformly charged tracks were measured on the photographs. The measurement results were then processed on the Razdan-3 computer. Only 270 intersecting tracks were found. A graph is given for the differential cross section of the reaction. The results show that the cross section value of 7.4 ± 1.2 microbarns obtained by the authors in comparison to data obtained for lower energies elsewhere shows the logarithmic dependence of the charge exchange cross section on the pulse, equal to -1.58 ± 0.05. The authors thank K. G. Boreskov, A. M. Lapidus, S. T. Sukhorukov, and K. A. Ter-Martirosyan for their presentation of the computational results as the dependence of the differential cross section onpulse transfer (do/dt). This dependence is compared with predictions of the Regge pole model.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

USSR

BALOSHIN, O. N., VLADIMIRSKIY, V. V., DUKHOVSKOY, I. A., KISHKURNO, V. V., KRUTENKOVA, A. P., KULIKOV, V. V., NIKOLAYEVSKIY, YE. S., PETRUKHIN, V. N., RADKEVICH, I. A., and FEDORETS, V. S., Institute of Theoretical and Experimental Physics of the State Committee for the Use of Atomic Energy

"Study of the Reaction $\pi^- p \rightarrow pX^-$ at a Momentum of 3.25 GeV/c With a High Momentum Transfer"

Moscow, Yadernaya Fizika, Vol 14, No 1, Jul 71, pp 131-133

Abstract: The authors investigate the spectrum of missing masses of a proton in the reaction $\pi^- p \rightarrow pX^-$ for high transfer momentums using a track spectrometer with optical spark chambers in a magnetic field. They found the momentum of the primary π^- mesons to be 3.25 GeV/c, and they measured the differential cross section of the formation of the ρ^- meson in the range of angles $-1 \leq \cos\theta^* \leq -0.0005$, which was found to be equal to 28.2 ± 9.8 μbarn/sterad. Figure 1 shows the spectrum of the missing masses in this reaction for a momentum of the π^- meson of 3.25 GeV/c. Figure 2 shows the cross section of the creation of the ρ^- meson backwards in the reaction $\pi^- p \rightarrow p\rho^-$ as a function of the momentum of the π^- mesons. The article contains 2 figures and 5 bibliographic entries. 1/1

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Acc. Nr. AP0055635 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code UR 0460

112479f Effect of x-ray radiation on the rate of polyisoprene diffusion into rubber. Vladimirskii, Yu. B.; Zakharov, G. M.; Rylov, S. A. (Leningrad, Politekh. Inst. im. Kalinina, Leningrad, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(2), 165-6 (Russ). The diffusion of tagged polyisoprene (I) (mol. wt. 2×10^4) into natural rubber (II) irradiated with x-rays at a dose rate of 700 R/sec in Ar, O, or air was studied. The diffusion coeff. of I declined from 1.8×10^{-13} to 0.6×10^{-13} cm^2/sec after II had been irradiated in Ar with 0 to 2.6×10^5 rads, suggesting that radiative crosslinking had occurred. Irradn. of II with 7×10^5 rads in the presence of O was accompanied by increased mol. mobility and lower diffusion coeff. due to competing degradation and crosslinking.

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REEL/FRAME 19840937

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USSR

VLADIMIRSKIY, Yu. N. UDC: 517.948:513.88

"Remarks on Nonlinear Mappings of Locally Convex Spaces"

Kishinev, Izvestiya Akademii Nauk Moldavskoy SSR: Ser. Fiz.-tekhn. i mat. nauk, No 2, 1973, pp 3-9

Abstract: Let X and Y be Banach spaces, the morphism $f:X \to Y$ being defined and differentiable in the vicinity of the point $x_0 \in X$, and f' being continuous at x_0. It is known that if $f'(x_0)$ is an isomorphic imbedding under these assumptions, then f makes a homeomorphism of some neighborhood U of the point x_0 with $f(U)$; on the other hand if $f'(x_0)$ is surjective, then f maps some neighborhood U of the point x_0 into the neighborhood $f(x_0)$ in Y. In this paper these facts are extended to locally convex spaces. As a corollary, the author notes one variant of a theorem on the inverse function for locally convex spaces.

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AUTHOR-(03)-CHERKASOV, V.M., VLADIMIRTSEV, I.F., KHRIPKO, S.S.

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CIRC ACCESSION NO--AT0124386 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. (HN:C(NH SUB2)) SUB2 S.2HCL (I) GAVE WITH H SUB2 O SUB2 IN ACOH 74-86PERCENT HN:C(NH SUB2)S(O)SC(NH SUB2):NH.2H SUB2 O SUB2 (II) M. 136-7DEGREES. II TREATED WITH HCL, YIELDED I. ALK. HYDROLYSIS OF II GAVE H SUB2 NCN, (NH SUB2) SUB2 CS, AND NA SUB2 SO SUB4. FACILITY: INST. ORG. KHIM., KIEV, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520010-6

Acc. Nr: AP0046566 Ref. Code: UR0206

PRIMARY SOURCE: Vestnik Dermatologii i Venerologii, 1970, Nr 1, pp55-58

ANTICANDIDIAL PROPERTIES OF CERTAIN DERIVATIVES OF B-NITROSTYROL

B. Ye. Bilich, V. M. Cherkasov, I. F. Vladimirtsev

Summary

The author studied anticandidial activity of 20 β-nitrostyrols, of which 4-bromo-β,β-methylnitrostyrol was found to be the most active and the least toxic. It produced a strong anticandidial effect inhibiting the growth of different species of Candida fungi in concentrations of 1—5.1 ug/ml. This property of the drug is combined with a marked capacity to inhibit the growth of staphylococci and streptococci. 4-Bromo-β,β-methylnitrostyrol is moderately toxic for white mice (LD_{50} by the subcutaneous route is 421 ± 1.3 mg per kg, by the intraperitoneal route 75.2 ± 1.1 mg per kg).

In treatment of visceral candidiasis of mice 4-bromo-β,β-methylnitrostyrol showed nearly the same chemotherapeutic effectiveness as nistatin, and was also effective in treatment of candidial lesions of the rabbit skin.

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USSR

UDC 632.95

VLADIMIRTSEV, I. F., KARABANOV, Yu. V., KHRIPKO, S. S., RYBCHENKO, L. I., CHEREPENKO, G. I.

"Biological Activity of Substituted α'-nitrostilbenes"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiologically Active Substances. Republic Interdepartmental Collection), 1972, No 4, pp 139-142 (from RZH-Khimiya, No 2 (II), Feb 73, Abstract No 2N507)

Translation: In order to obtain plant growth regulators and fungicides, a number of derivatives of styrene and stilbene were synthesized; $PhCH{=}CH_2$ suppresses the growth of oat roots in a concentration of 0.01% by 56%, and in a concentration of 0.001%, by 60%, and it suppresses the leaf growth by 45 and 21% respectively. The $PhCH{=}C(NO_2)Ph$ (I) has a significant inhibiting effect. In a 0.01% concentration it suppresses the growth of oats and lettuce by 79%. The $PhCH{=}CHNO_2$ not only suppresses growth but causes the plants to die. The fungicidal activity of I approaches that of figon; π-Br- and π-Cl-I are of practical interest as root and stalk growth stimulators.

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