"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 025 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0139619

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. AND CLIN. EVIDENCE CONCERNING LONG TERM STORAGE OF FROZEN ERYTHROCYTES IS REVIEWED. BOTH FAST FREEZING IN LIQ. N WITH THE USE OF SMALL CONCNS. OF GLYCEROL AND SLOW FREEZING AT MINUS 60DEGREES TO MINUS 70DEGREES WITH THE USE OF HIGH CONCNS. OF GLYCEROL ARE APPLICABLE. THE PROTECTING SOLN. USED BY THE AUTHORS FOR FAST FREEZING CONTAINS GLYCEROL (15PERCENT), MANNITOL, AND NACL IN A 1:1 MIXT. WITH THE RED BLOOD CELLS. AFTER LONG TERM STORAGE AND THAWING, THE PROPORTION OF DAMAGED ERYTHROCYTES DOSE NOT EXCEED 2-5PERCENT; THE AMT. OF HB DOES NOT EXCEED 1.5PERCENT; THE CONCN. OF ATP IN THE CELLS IS 4.2-5.2 MGPERCENT; THE GLYCOLYTIC ACTIVITY IS 80-90PERCENT OF THE ORIGINAL; THE INTRACELLULAR CONCN. OF K IS 300-350 MGPERCENT AS COMPARED WITH THE ORIGINAL 370-400 MGPERCENT; THE HALF LIFE OF THE CELLS IN THE CIRCULATION OF THE RECIPIENT IS MORE THAN 30 DAYS. THE TIME OF STORAGE AFTER THAWING MAY BE INCREASED BY THE ADDN. OF INOSINE AND ADENINE. THE BEST EXTRACELLULAR AGENT EXAMD. WAS POLY(VINYLPYRROLIDONE) (PVP). PVP DOES NOT FORM COMPLEXES WITH BLOOD PROTEINS. IN SUSPENSIONS OF ERYTHROCYTES FROZEN WITH PVP (MOL. WT. 25,000, FINAL CONCN. 8PERCENT) IN THE PROPORTION OF 1:1 AND WITH THE ADDN. OF ALBUMIN (FINAL CONCN. 1PERCENT), 95PERCENT OF THE CELLS WERE FOUND UNDAMAGED AFTER THAWING. PVP WITH A MOL. WT. OF 12,000 IN THE PRESENCE OF ALBUMIN HAS SIMILAR PROTECTIVE ACTION; ITS ADVANTAGE IS IN ITS BEING FULLY EXCRETED FROM THE BODY WITHIN 24 HR AFTER TRANSFUSION. THE POSSIBILITY OF USING POLYMERS BASED ON STARCH WAS CONSIDERED.

FACILITY: ISENT. INST. GEMATOL. PERELIV. KROVI, MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 018 UNCLASSIFIED

TITLE--DEEP FREEZING BLOOD -U- PROCESSING DATE--04DEC70

AUTHOR-(02)-VINOGRADFINKEL, F., KISELEV, A.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA GAZETA, SEPTEMBER 11, 1970, P 3, COLS 1-3

DATE PUBLISHED--11SEP70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD PRESERVATION, FREEZING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1796 STEP NO--UR/9034/70/000/000/0003/0003

CIRC ACCESSION NO--AN0138743

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 018

UNCLASSIFIED

CIRC ACCESSION NO--AN0138743 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACCORDING TO THE ARTICLE, ITS AUTHORS COLLABORATED WITH A TEAM OF UNNAMED RESEARCHERS AT THE CENTRAL INSTITUTE OF HEMATOLOGY ON THE DEVELOPMENT OF THEORETICAL ASPECTS OF DEEP FREEZING BLOOD. TWO METHODS OF DEEP FREEZING ARE DESCRIBED. HOWEVER, IT IS NOT CLEAR WHETHERE THEY WERE DEVELOPED IN THE U.S.S.R. OR ABROAD. FACILITY: MINISTRY OF PUBLIC HEALTH, U.S.S.R.

FACILITY: BLOOD CONSERVATION LABORATORY.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC 8.74

PETKYAVICHUS, I. YU., MUDENAS, V. K., and VINOGRADNYY, V. S., Institute of Physics and Mathematics, Academy of Sciences Lithuanian SSR

"Increasing the External Memory of BESM-4 Computer to Eight Magnetic Drums"

Uvelicheniye vneshney pamyati mashiny BESM-4 do 8 magnitnykh barabanov (cf. English above), Vil'nyus, 1970, 46 pp, ill., bibliography with four titles (No 3493-71 Dep.) (from RZh-Matematika, No 5, May 72, Abstract No 5V482DEP from authors' abstract)

Translation: A description is given of one of the variants for enlarging the external magnetic-drum memory of the BESM-4 computer. The authors consider the eight-drum variant which operates on computer No 39 and present a diagnostic test which they have compiled for the external magnetic-drum memory, a block diagram of its program, as well as the program itself.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC: 8.74

PETKYAVICHUS, I. Yu., MUDENAS, V. K., VINOGRADNIY, V. S.

"Enlargement of the External Memory of the BESM-4 Computer to Eight Magnetic Drums"

Uvelicheniye vneshney pamyati mashiny BESM-4 do 8 magnitnykh barabanov. In-t fiz. i mat. AN LitSSR (cf. English above. Institute of Physics and Mathematics, Academy of Sciences of the Lithuanian SSR), Vil'nyus, 1970, 46 pp, ill., bibliogr. 4 titles (No 3493-71 Dep.) (from RZh-Kibernetika, No 5, May 72, Abstract No 5V482 DEP)

Translation: The paper gives a description of one modification of an expansion of the external magnetic-drum memory of the BESM-4 computer. An operating version for eight drums on computer No 39 is considered. A diagnostic test developed by the authors for an external magnetic-drum memory is presented as well as a flowchart of the program, and the program itself. Authors' abstract.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC 621.396.234

ROZOV, V.M., VINOGRADOV, A.A., NOSOV, V.I. [Members, Scientific-Technical Society Of Radio Engineering, Electronics, And Communication imeni A.S. Popov]

"Effect Of AGC On The Level Of Transient Interference In Multichannel Systems Of Shortwave Communication"

Radiotekhnika, No 4, Apr 1972, pp 1-7

Abstract: The effects are considered of a change of the amplitude of signals in a shortwave channel on the level of transient noise in communication systems with orthogonal signals. A method is presented for finding the averaged value of the rate of change of the signal envelope from the integral distribution of the envelope, making it possible to manage without involved mathematical apparatus. The decrease of the reliability of reception because of transient interference during fading is evaluated and the requirements are determined for an automatic gain control system in the receiving channel [trakt] of the multiplexing device in order to reduce the probability of error. An analysis is made of the impairment of orthogonality under conditions of slow fading when the signal envelope throughout the sample changes insignificantly and abrupt phase fluctuations leading to a frequency drift of the signal being received are absent. Knowing the magnitude of the signal and the transient interference, it is possible to find 1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

ROZOV, V.M., et al, Radiotekhnika, No 4, Apr 1972, pp 1-7

the dependence of the signal/noise ratio on the principle and rate of change of the signal amplitude. It is demonstrated that transient interference reduces the reliability of reception which cannot be increased by an increase of the signal power. However, it can be decreased by separation of all the bands of a telephony channel into narrow bands and the use of AGC in each of them. 1 tab. 4 ill. 6 ref. Received, 3 July 1970; after further improvement, 1 Feb 1971.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, A. A. UDC: 621.372.061

"Analysis of Integrator Operator in Static Mode"

V sb. Radioelektron. v nar. kh-ve SSSR, Ch. 2 (Radioelectronics in the National Economy of the USSR, Part 2) 1970, pp 123-129 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A136)

Translation: Two integrator (I) circuits are considered: an I in the form of an RC network, and an electronic I with a resolving amplifier. It is shown that the accuracy of the I operation with the resolving amplifier is determined not only by the gain of the latter but by its impedances as well. One illustration, one table, bibliography of six. N. S.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

Miscellaneous

USSR UDC 550.4

VINOGRADOV, A. D., Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy, Academy of Sciences USSR, Moscow

"High Temperature Protoplanetic Processes (The Problem of the Formation of Metallic Cores of the Planets)"

Moscow, Geokhimiya, No 11, Nov 71, pp 1283-1296

Abstract: A review type paper with 70 references addressed to the problem of the formation of metallic cores in terrestrial type planets. It has been shown that of all the existing theories of the formation of metallic cores in the planets, the most valid is the hypothesis about the condensation growth of the iron-nickel core from a cooling plasma cloud of solar composition. It has been established that the distribution of chemical elements among the condensing phases (iron and silicate phases) is controlled by the partial oxygen pressure in the Fe-O system.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SELF ASSOCIATION OF TERT BUTYL AND TERT AMYL HYDROPEROXIDES STUDIED BY NMR AND IR SPECTROSCOPIC METHODS -U-

AUTHOR-(04)-YABLONSKIY, O.P., BYSTROV, V.F., VINOGRADOV, A.N., BELYAYEV, V.A.

COUNTRY OF INFO--USSR

SOURCE--TEOR. EKSP. KHIM. 1970, 6(1), 116-21

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROPEROXIDE, NMR SPECTRUM, IR SPECTRUM, DIMERIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1504 STEP NO--UR/0397/70/006/001/0116/0121

CIRC ACCESSION NO--AP0128899

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 023

UNCLASSIFIED

CIRC ACCESSION NO--AP0128899 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN SELF ASSOCN. OF TERT BUOOH AND TERT C SUB5 H SUB11 OOH IN CCL SUB4 TWO PROCESSES WERE FOUND: CYCLODIMERIZATION, FOLLOWED BY LINEAR ASSOCN. EQUIL. CONSTS. FOR THESE PROCESSES WERE DETD. AND DISCUSSED. FACILITY: NAUCH.-ISSLED. INST. MONOMER. SIN. KAUCH., YAROSLAVL, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC 523.51

VINOGRADOV, A. P., LAVRUKHINA, A. K., GANIYEV, A. G., SIL'VANOVICH, Yu. A., and RAKHIMOV, Kh. R., Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy, Acad. Sc. USSR, Moscow, and the Institute of Nuclear Physics Acad. Sc. UzbSSR, Tashkent

"Distribution of Platinoids and Gold Between Various Phases of the Meteoritic Matter. Communication 2"

Moscow, Geokhimiya, No 7, Jul 73, pp 963-974

Abstract: The relationship of platinoid and gold content in chondrites of various petrological types to the Ni content in the Fe-Ni phase and to the composition of the latter are considered. The observed regularities may be accounted for by the differences in partial pressure of oxygen in the zones of protoplanetic cloud in which the chondrites had been formed. Chondrites of the L-group formed at a higher P_{O_2} value while the H-group chondrites formed at a lower one. It has been assumed that chondrites in the H-group containing in excess of 8% of the Fe-Ni phase are representatives of the least altered primary matter of solar composition which had not been subject to substantial oxidation in the protoplanetic cloud.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC 621.375.82

VINOGRADOV, A. V., and YUKOV, YE. A.

"Effect of Two-Photon Processes on X-Ray Spectrum of Laser Plasma"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Moscow, "Sov. Radio," 1973, pp 105-107 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10D894 from authors' abstract)

Translation: It is shown that as a result of Raman scattering of laser radiation and stimulated two-photon radiation additional lines appear in the X-ray spectrum of a laser plasma -- satellites of forbidden transitions which at a flux density of $I_o \sim 10^{14}$--10^{15} w/sq cm are comparable in intensity to allowed lines. Measurement of the ratio of the intensity of the laser satellites to the intensity of the allowed lines can be used to determine the intensity of the light field and the electron density in the plasma. Bibliography with nine titles.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC: 621.378.9:533.9.02

VINOGRADOV, A. V., PUSTOVALOV, V. V.

"Plasma Heating by Stimulated Laser Emission (Survey)"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 3-22

Abstract: Formulas are derived and analyzed for the coefficients of diffusion of light-scattering electrons at any velocities (in a nonrelativistic plasma); the rates of heating of the electrons and ions of the plasma are determined and discussed in detail. Some of the results are compared with data published previously. In the authors' opinion, the proposed theory is of interest from the viewpoint of the problem of laser heating of a dense plasma to thermonuclear temperatures. The authors thank B. Ya. Zel'dovich, V. S. Zuyev, O. N. Krokhin, V. B. Rozanov, V. P. Silin, and I. I. Sobel'man for reading the manuscript and for constructive criticism. Seven illustrations, bibliography of sixty-one titles.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, A. V., ZEMLYANUKHINA, N. A., PAVLOVA, I. V., DRONOVA, N. P., and LOPATINA, N. N.

"Correlation of Methods of Determining Aluminum in Beryllium and in its Alloys"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 2, 1973, pp 148-149

Abstract: For the determination of 0.1-30% aluminum in beryllium and in beryllium-aluminum alloys methods are recommended which do not require preliminary separation of these elements. The photometric method with methylthymol blue (MTB) is recommended for concentrations $\geqslant$ 0.1% Al. Be did not give a colored complex with MTB at pH 3, but in high concentrations Be lowers the optical density of the solution. Complexone-III makes it possible to determine Al in the presence of many elements shielded by the complexone. A verification was made of the effect of Be on the Complexometric determination of Al by means of back titration of complexone excess by a solution of thorium salt with MTB indicator at pH 3 in solutions with Al:Be from 1:1 to 1:20. The examination of the gravimetric method with hydroxyquinoline showed that high concentrations of Be hinder the precipi ation of Al. A comparative evaluation of the three methods on two samples of binary Be-Al alloys revealed that the gravimetric-hydroxyquinoline method is most exact and the photometric method is most rapid. The latter is recommended and its practicability is discussed. One table, nine bibliographic references.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, A. V., URNOV, A. M., and SHEVEL'KO, V. P., Physics Institute imeni P. N. Lebedev, USSR Academy of Sciences

"Distribution by Orbital Quantum Numbers of Highly-Excited Atoms, Forming by Collisions of Heavy Particles"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 60, No 6, Jun 71, pp 2060-2065

Abstract: The formation of highly excited atoms as a result of atomic collisions is of interest in a number of problems in astrophysics and plasma physics. Since the energy spectrum of a highly excited atom is similar to that of hydrogen, it is especially important to investigate the processes that take place and lead to the formation of excited hydrogen atoms. The usual method of obtaining excited hydrogen atoms in laboratory plasma is the charge transfer of protons and the excitation of H atoms by collisions with various atomic targets.

In this article the authors find analytical expressions for the cross sections of formation of fast H atoms in the reactions $H^+ + A \rightarrow H(n\,l) + A^+$ and $H(1s) + A \rightarrow H(n\,l) + A$ (A is an arbitrary atom) that are valid when $n \gg 1$. Comparison with precise computations, using an argon target as an example, showed that these formulas may be used even when $n \geq 3$.

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, A. V., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 60, No 6, Jun 71, pp 2060-2065

As would be expected, hydrogen atoms form with the greatest probability in states with $\ell = 0, 1$.

Figures 1 and 2 show the cross section of charge transfer as a function of the principal quantum number and the orbital moment, respectively. Figures 3 and 4 show the cross sections of excitation of a hydrogen atom as a function of the principal quantum number of a finite state and the orbital moment of the finite state, respectively.

The article contains 4 figures and a bibliography of 11 titles.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

Acc. Nr. AP0032929

Abstracting Service: CHEMICAL ABST. 3-70

Ref. Code 4K0000

49203u Broadening of spectral lines in highly rarefied homogeneous gases. Alekseev, V. A.; ~~Vinogradov, A. V.~~; Sobel'man, I. I. (P. N. Lebedev Phys. Inst., Moscow, USSR). *J. Quant. Spectrosc. Radiat. Transfer* 1970, 10(1), 55-60 (Russ). The problem of the enhancement of radiation linewidth produced by a "coupling effect" is discussed in connection with exptl. results of Kuhn, Lewis and Vaughan. For N atoms in a small vol. ($V \ll \lambda^3$), when the interat. distances are small compared with the resonance wavelength λ, this effect produces an "N-time increase" in the radiation linewidth. On the other hand, for a gas in a large vol. ($V \gg \lambda^3$) the effect is completely absent; and the radiation linewidth is the same as for an isolated atom. As a possible explanation for the anomaly in self-broadening observed at low pressure by Kuhn, Lewis, and Vaughan, a statistical dependence between Doppler and impact broadening is suggested. RCTT

1/1

REEL/FRAME 19701282

21

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC 621.396.67.001.5

BELDOVSKIY, V. A., VINOGRADOV, B. A., VAN'KIN, A. S., ZVEREV, S. B., BUTKEVICH, A. O., MURAV'YEV, Yu. K.

"A Method of Plotting the Radiation Patterns of Antennas"

USSR Author's Certificate No 284070, filed 10 Apr 69, published 4 Jan 71 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11B112 P)

Translation: The proposed method enables automatic recording of a radiation pattern in 10-20 s on a CRT with image persistence and photographing in case of necessity. The antenna to be studied is mounted on a rotating platform and used as a receiving antenna. The emf from the antenna is sent to the receiver with linear amplification of the range to be studied. The output voltage of the receiver is sent through a current collector to the input of a discrete conversion module which generates a sequence of pulses which are delayed with respect to the trigger pulse. This pulse train is then sent to the electrode of a CRT with circular scan. Scanning of the CRT is triggered by pulses with a prf which ensures the accuracy required in reproduction of the radiation pattern. When the scan

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

BELDOVSKIY, V. A., et al., USSR Author's Certificate No 284070, filed 10 Apr 69, published 4 Jan 71 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11B112 P)

rotation is synchronized with antenna rotation by means of a primary pickup circuit and an amplifier for the signal from the drive tracking system, the radiation pattern is reproduced on the screen of the CRT with a high accuracy determined by the linearity of the image stages. A calibrated mark unit shapes marking pulses for every five degrees of rotation of the antenna, and for controllable intervals with respect to field strength. The method appreciably simplifies the process of taking the radiation patterns of antennas; it can be used in synthesizing an antenna, and also in determining the optimum arrangement of transmitting and reception units for zones with a minimum noise level. Two illustrations.
A. K.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC 537.563:547.23

FRIDLYANSKIY, G. V., PAVLENKO, V. A., VINOGRADOV, B. A., GRISHIN, N. N., BOGOLYUBOV, G. M., and PETROV, A. A., Leningrad Technological Institute imeni Lensoveta

"Organic Derivatives of Group V-VII Elements. XX. Exact Composition of Ions in Mass Spectra of Alkylphosphine Sulfides and P=S Bond Strength"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1707-1709

Abstract: The article describes results of the measurement of mass numbers of ions in mass spectra for triethylphosphine sulfide and tetraethyldiphosphine disulfide on a double-focusing mass spectrometer. The dissociation energy of the P-P bond in tetraethyldiphosphine disulfide was previously found by the authors from the appearance potential of the ion $(M/2)^+$. Precise measurement of the mass in the present article confirms the composition assigned to this ion. The dissociation energy of the P=S bond was found to be equal to 3.7 ev or 85 kcal/mole, which is in satisfactory agreement with the value obtained from the thermal effect of the tripropylphosphine oxidation reaction (91.6 kcal/mole). Determination of the exact composition of ions in the mass spectra of alkylphosphine sulfides shows the resistance of the P=S bond to the action of an electron impact. This resistance is characteristic of the chemical bonds between atoms of Group V and VI elements possessing unshared electron pairs.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC: [(621.391.82-758.37):621.375.43(088.8)

BUTOV, N. S., VINOGRADOV, B. M.

"An Interference-Quenching Device for a Tunnel-Diode Amplifier"

USSR Author's Certificate No 278772, filed 28 Apr 69, published 3 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A234 P)

Translation: Existing interference-quenching devices for tunnel-diode amplifiers are relatively narrow-band devices and do not provide sufficiently reliable protection of the amplifier when it is subjected to strong interference. In the proposed device, diode switches are connected between the open ends of quarter-wavelength sections of strip lines and the amplifier shield. The degree of interference attenuation increases as the interference intensity increases. A. K.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

Nuclear Physics

USSR

VINOGRADOV, B. N., YELAGIN, Yu. P., Institute of Atomic Energy imeni I. V. Kurchatov

"Concerning the Question of Magic Numbers in Neutron-Rich Nuclei"

Moscow, Yadernaya Fizika, Vol 17, No 2, 1973, pp 250-257

Abstract: The discovery of magic numbers has brought about a considerable advance in nuclear theory. In this connection, the problem of magic numbers far from the valley of β-stability is of considerable interest. It is difficult to give a predetermined answer to the question of behavior of magic numbers in the region of exotic nuclei because of various factors, among which are: 1) the change in nature of the spectrum of discrete states (including the small number of free states); 2) the possible change in the size of the gap in discrete states as the distance from stable nuclei increases; 3) the similarity of the continuous spectrum for the excess nucleons in the given nucleus. The authors make a detailed study of the influence of such factors. Neutron-rich nuclei are considered, since neutrons have a stronger stabilizing effect. It is found that with increasing distance from the valley of β-stability the magic numbers of

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, B. N., YELAGIN, Yu. P., Yadernaya Fizika, Vol 17, No 2, 1973, pp 250-257

neutrons remain the same, and no new ones show up. This conclusion has also been confirmed by some experimental data. For instance, in experiments on fission in studying the fine structure of mass distribution, an increased yield of nuclei with mass number of 132 has been observed. The authors thank P. E. Nemirovskiy for constructive criticism and discussion.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INFLUENCE OF THE STRUCTURE AND DEGREE OF DISPERSION OF FELDSPAR SANDS ON SOME PROPERTIES OF HARDENED CEMENT OF LIMESAND CONCRETES -U-

AUTHOR-(02)-VINOGRADOV, B.N., AVAKOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK TURKM. SSR, SER. FIZ.-TEKH., KHIM. GEOL. NAUK 1970, (1), 41-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--CEMENT, QUARTZ, CHEMICAL COMPOSITION, HARDNESS, MINERAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0730 STEP NO--UR/0202/70/000/001/0041/0046

CIRC ACCESSION NO--AP0113594

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113594

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SILICEOUS COARSELY DIMENSIONAL INDUSTRIAL PRODUCTS COULD BE OBTAINED ONLY FROM QUARTZ SANDS, CONTG. NOT MORE THAN 10-15PERCENT MINERALS OF THE FELDSPAR GROUP. WITH AN INCREASE OF ALK. MINERAL THERE IS DETERIORATION IN PHYS. CHEM. PROPERTIES OF CEMENTING MATERIAL AND ALSO IN ITS STABILITY. FOR THE STUDY, 4 ALK. MINERALS WERE SELECTED: NEPHELINE, ALBITE, MICROLITE, AND DAMOURITE WITH ADDN. OF QUARTZ. THE CHEM. COMPN. OF THE ABOVE MINERALS IS GIVEN. SAMPLES WERE PREPD. CONTG. CA(OH) SUB2 40, CASO SUB4.2H SUB2 O, AND SILICEOUS COMPONENT 55PERCENT. THE RATIO OF QUARTZ TO ALK. MINERAL IN THE SILICEOUS COMPONENT WAS USED IN THE RATIO OF 3:1, 1:1, 1:3 AND 0:1 BY WT.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR UDC 533.697.3.001.24

VINOGRADOV, B. S., and KORSHIN, I. M., Candidates of Technical Sciences

"Calculation of Flow in a Vaneless Diffuser With Allowance for Reverse Currents"

Leningrad, Energomashinostroyeniye, No 12, Dec 71, pp 20-24

Abstract: An attempt is made to calculate airflow in a vaneless diffuser based on the gas-dynamic flow model developed at Kazan' Aviation Institute but under the assumption that reverse currents form a layer uniformly distributed along a circle, so that the flow retains axial symmetry. In using the hydrodynamic flow scheme, a method has to be developed for calculating three-dimensional flow, permitting determination of the flow velocities and angles along the width on any radius and the velocities and pressure on the boundary of the overflowing layer.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC 533.6.011:532.517.42

VINOGRADOV, B. S.

"Some Modifications of Total Momentum Gasdynamics Functions"

Kazan', Tr. Kazan. Aviats. In-ta (Works of Kazan' Aviation Institute), No 133, 1971, pp 72-81 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, No 2, Feb 72, Abstract No 2.34.8)

Translation: The article suggests to modify the gasdynamics functions for calculation of the total momentum of a nonuniform flow, the boundary layer in particular. The velocity on the outside of the boundary layer is the independent variable. The total momentum of the boundary layer profile is determined by means of the suggested functions. The characteristics of the velocity profile are taken into account by the relative (referring to the boundary layer thickness) values of the displacement and momentum thicknesses. The modifications of type $z(\lambda_1)$ and type $r(\lambda_1)$ functions are considered for

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, B. S., Kazan'. Tr. Kazan. Aviats. In-ta, No 133, 1971, pp 72-81.

a nonuniform flow (boundary layer) as well as for a two-layer flow, consisting of the boundary layer and of the adjoining potential flow stream of certain thickness. Cases are considered when the control surface, along which the total momentum is determined, is not normal to the velocity vector. The suggested gasdynamics functions can be used for practical calculations, such as calculations of separated flow. 2 references.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, B. S.

"Some Properties of Gas Flow in the Region of a Vortex Filament"

Tr. Kazan. aviats. in-ta (Works of Kazan' Aviation Institute), 1970, vyp. 114, pp 89-100 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B829 by I. M. Baskin)

Translation: The article considers gas flow inside a vortex filament and in the vicinity thereof. The problem for viscous compressible gas with formation of a central core is solved given the following assumptions: outside the core flow is potential; in the core gas is viscous but friction work equals zero; there is no heat transfer from layer to layer; in the entire region under consideration gas state parameters are related to the isentropic equation. It is noted that the analysis made here, though performed with a number of assumptions and simplifications, permits determination of the chief characteristics of gas flow inside a vortex filament and in the vicinity thereof.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

VINOGRADOV, B. V.

JPRS 55746

18 April 1972

UDC 551.501

SPACE METHODS FOR TERRESTRIAL STUDIES

Translation of Russian-language book by B. V. Vinogradov and K. Ya. Kondrat'yev, Kosmicheskiye Metody zemlevedeniya, Gidrometeorologicheskoye Izdatel'stvo; Leningrad, 1971, 192 pages.

CONTENTS

	PAGE
PREFACE	1
INTRODUCTION	3
CHAPTER 1 : Basic Methods and Trends in Terrestrial Study From Space	6
CHAPTER 2 : Complex Interpretation of Local Television and Photographic Pictures of Earth	28
CHAPTER 3 : Composite Interpretation of Global TV and Photographic Images of Earth	95
CHAPTER 4 : Interpretation of Infrared Pictures of Earth	115
CHAPTER 5 : Space Spectrometric Presentation (Indication)	127
BIBLIOGRAPHY	209
CERTAIN SPECIAL GEOGRAPHIC TERMS USED IN THE STUDY	232

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

General

USSR UDC 778.35+631.175(213.5)

VINOGRADOV, B. V., Leningrad State University

"The Use of Remote Indication and Aerial Photography for Estimating the Productivity of the Vegetation in Arid Zones"

Leningrad, Rastitelnyye Resursy, Vol 6, No 2, 1970, pp 157-165

Abstract: A morphometric method of estimating the productivity of plants is based on measuring the size and number of plants. The method fits only tree-shrub components with different photographic images. The diameter of the crowns can be determined on the photos at intervals of 0.25-0.5-1.0 m. Height may be determined directly on the photos, or by the length of shadows. The height of plants with spherical crowns correlate with the diameter of the crown and the trunk. The density of plants in arid zones can be determined with an error of less than 5%. The photometric method is based on the correlation between the productivity of plants and the density of images on the photographic negatives, especially on panchromatic material. The relationships were studied in semidesert plant associations with different ecological and technical conditions. The spectrometric method based on measuring the spectral brightness of the plant cover, depends on the smoothness of the surface of the cover. Increase in the roughness of the plant

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, B. V., Rastitelnyye Resursy, Vol 6, No 2, 1970, pp 157-165

cover decreases the reflecting power. The correlation between the reflecting power of plants and their productivity is so strong that an equation including the brightness of soil, plants and the amount of the vegetative mass has been established. The species composition of the plant associations, their phenological state and the spectral characteristics of the receptors have some influence on the formula. These methods could be used to get information from satellites and orbital laboratories.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/3 041 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--GEOGRAPHIC ZONALTY OF AFRICAN SECTOR OF EARTH FROM GLOBAL PHOTOGRAPHY FROM ZOND 5 SPACESHIP -U-

AUTHOR--VINOGRADOV, B.V.

COUNTRY OF INFO--USSR, AFRICA

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 191, NR 6, 1970, PP 1343-1346

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT, SPACE TECHNOLOGY, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SPACEBORNE EARTH PHOTOGRAPHY, CLOUD COVER, GEOLOGIC FORMATION, GEOGRAPHIC LOCATION/(U)ZOND 5 CIRCUMLUNAR PROBE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0046 STEP NO--UR/0020/70/191/006/1343/1346

CIRC ACCESSION NO--AT0129330

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/3 041 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0129330

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF GLOBAL PHOTOGRAPHS WAS TAKEN ON 21 SEPTEMBER 1968 AT ABOUT 1200 HOURS MOSCOW TIME BY THE SPACE STATION "ZOND 5" AT AN ALTITUDE OF ABOUT 90,000 KM. EARTH PHOTOGRAPHS WERE TAKEN ON THE DAY OF THE AUTUMN EQUINOX, ENSURING UNIFORM ILLUMINATION OF THE NORTHERN AND SOUTHERN HEMISPHERES AND A COMPARABILITY OF SIMILAR ZONES TO THE NORTH AND SOUTH OF THE EQUATOR. THIS ARTICLE DESCRIBES THE RESULTS OF INTERPRETATION FROM A PHOTOGRAPHIC PRINT WITH TENFOLD ENLARGEMENT WHICH MADE POSSIBLE A TOTAL VISUAL IDENTIFICATION OF IMAGE ELEMENTS. THE INTERPRETATION WAS MADE OF LATITUDINAL GEOGRAPHIC ZONALITY OF AFRICA FROM THE TERMINATOR (ABOUT 50DEGREES W) TO THE DAYTIME HORIZON (ABOUT 50-60DEGREES E). THE PRINCIPAL INDICATORS OF ZONALITY WERE THE TONE AND TEXTURE OF THE PHOTOGRAPHIC IMAGE OF THE PLANT AND SOIL COVER, DISTRIBUTION AND CONFIGURATION OF CLOUD COVER, DISTRIBUTION AND CONFIGURATION OF CLOUD COVER, PATTERN AND DEGREE OF EXPRESSION OF GEOLOGICAL FEATURES ON THE PHOTOGRAPH AND MOISTURE CONTENT OF THE SURFACE. FIG. 1 IN THE TEXT IS THE ACTURAL PHOTOGRAPH OF THE CONTINENT; FIG. 2 IS THE INTERPRETATION. THERE IS A BRIEF DISCUSSION OF THE TONE, TEXTURE AND OTHER CRITERIA USED IN DEFINING THE SUBTROPICAL EVERGREEN FORESTS, SUBTROPICAL STEPPES AND SEMIDESERTS, TROPICAL DESERTS, TROPICAL SEMIDESERTS, DRY SAVANNAS, TYPICAL SAVANNAS, MOIST SAVANNAS, MOISE EQUATORIAL FORESTS, TROPICAL TRADES WINDS ZONE AND ZONE OF EQUATORIAL CONVERGENCE. THERE IS A BRIEF DISCUSSION OF THE VALUE OF GLOBAL PHOTOGRAPY FROM A DISTANT SPACE LABORATORY.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

3/3 041 UNCLASSIFIED

CIRC ACCESSION NO--AT0129330 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--IT WILL HAVE CONSIDERABLE ADVANTAGES OVER SYRVEYS FROM SATELLITES IN LOW AND INTERMEDIATE ORBITS: GREATER SCANNING AREA, NO NEED FOR MASAICING OF THE IMAGE, NO DISTORTIONS DUE TO LOCAL PHOTOGRAPHIC AND TELEVISION INTERFERENCE. THE INFORMATION WILL BY SYNCHRONOUS FOR THE ENTIRE ILLUMINATED SIDE OF THE PLANET FROM THE TERMINATOR TO THE DAYTIME HORIZON. GLOBAL PHOTOGRAPHS WILL BE USEFUL IN NATURAL REGIONALIZATION, STUDY OF THE INTERACTION AMONG INDIVIDUAL METEOROLOGICAL SYSTEMS AND FLUCTUATIONS OF OCEAN CURRENTS, AS WELL AS THE PHENOLOGY OF VEGETATION ZONES AND THE SEASONAL MOISTURE REGIME AND STUDY OF PLANETARY GEOLOGICAL STRUCTURES. FACILITY: LENINGRAD STATE UNIVERSITY.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 036 UNCLASSIFIED

TITLE--SPACE METHODS FOR STUDYING THE EARTH, WAYS TO DEVELOP THEM AND THEIR APPLICATION FOR STUDYING THE EARTH'S NATURAL RESOURCES, SPACE

PROCESSING DATE--09OCT70

AUTHOR-(02)-VINOGRADOV, B.V., KONDRATYEV, K.YA.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, STATE UNIVERSITY MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, SERIYA GEOGRAFICHESKAYA, NO 2, 1970, PP 86-103

DATE PUBLISHED--------70

SUBJECT AREAS--SPACE TECHNOLOGY, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--ELECTROMAGNETIC RADIATION, ELECTROMAGNETIC FIELD, NATURAL RESOURCE, SPACEBORNE EARTH OBSERVATION, ARTIFICIAL EARTH SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0368

STEP NO--UR/9067/70/000/002/0086/0103

CIRC ACCESSION NO--AP0114659

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 036 UNCLASSIFIED

CIRC ACCESSION NO--AP0114659 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT PRESENT, IN CONNECTION WITH THE DEVELOPMENT OF SPACE METHODS AND THE CREATION OF VARIED AND HIGHLY SENSITIVE INSTRUMENTATION FOR THE REGISTRY OF ELECTROMAGNETIC RADIATION OF THE EARTH'S SURFACE AND THE ATMOSPHERE FROM SPACE, THE NEED HAS ARISEN FOR DEVELOPING A NEW SCIENCE WHICH THE AUTHORS CALL SPACE EARTH SCIENCE. THE OBJECTIVE OF THIS SCIENCE, WHOSE PRINCIPLES ARE DEFINED IN THIS ARTICLE, IS THE STUDY OF LOCAL, REGIONAL, ZONAL AND PLANETARY PATTERNS OF THE COMPOSITION, STRUCTURE, DYNAMICS AND RHYTHM OF THE GEOGRAPHIC ENVIRONMENT BY THE REGISTRY OF THE EARTH'S ELECTROMAGNETIC FIELD FROM FLIGHT VEHICLES AND THE INTERPRETATION OF IMAGES AND SPECTRA OF THE EARTH'S SURFACE IN DIFFERENT PARTS OF THE SPECTRUM FOR THE EXPLOITATION AND CONSERVATION OF NATURAL RESOURCES. THERE ARE SIX FUNDAMENTAL TYPES OF A SPACE SURVEY OF THE EARTH, EACH OF THEM DISCUSSED HERE IN DETAIL: 1) VISUAL OBSERVATIONS IN THE RANGE LAMBDA EQUALS 0.3-0.65 MU; 2) SPACE PHOTOGRAPHY IN THE RANGE LAMBDA EQUALS 3) SPACE SPECTROPHOTOMETRY IN THE RANGE LAMBDA EQUALS 0.3-1.1 MU; SPACE OBSERVATIONS IN THE INFRARED, IN THE RANGE LAMBDA EQUALS 0.3-3.0 MU; 4) MM; 5) SPACE MICROWAVE OBSERVATIONS IN THE RANGE LAMBDA EQUALS 0.01-3 CM; 6) SPACE RADAR IN THE RANGE LAMBDA EQUALS 0.3-10 SCIENCE IS CLOSELY RELATED TO INVESTIGATIONS OF PLANETS OF THE EARTH GROUP FROM SPACESHIPS WHICH CAN REGISTER THE ELECTROMAGNETIC FIELDS OF OTHER COSMIC BODIES. ACCORDINGLY, THE SPACE METHODS FOR EARTH SCIENCE DEFINED IN THIS PAPER ARE APPLICABLE IN GENERAL SPACE EXPLORATION.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 028

UNCLASSIFIED

TITLE--GLOBAL PHOTOGRAPHY OF THE EARTH -U-

PROCESSING DATE--02OCT70

AUTHOR--VINOGRADOV, B.V.

COUNTRY OF INFO--USSR

SOURCE--ZEMLIA I VSELENNAIA, JAN. FEB. 1970, P 31-38

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT, SPACE TECHNOLOGY

TOPIC TAGS--SPACEBORNE EARTH PHOTOGRAPHY/(U)MOLNIYA 1 SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1877

STEP NO--UR/0384/70/000/000/0031/0038

CIRC ACCESSION NO--AP0108207

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 028 UNCLASSIFIED

CIRC ACCESSION NO--AP0108207 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SURVEY OF THE CURRENT CAPABILITIES OF SATELLITES FOR LARGE SCALE PHOTOGRAPHY OF THE ENTIRE GLOBE. THE DIFFICULTIES ASSOCIATED WITH MOSAIC PATTERNS OF THE ENTIRE EARTH SURFACE ARE OUTLINED, AND THE ADVANTAGES OFFERED BY COMPLETE PHOTOGRAPHS OBTAINED FROM LARGE DISTANCES ARE EXPLAINED. EXAMPLES OF PHOTOGRAPHS OBTAINED FROM ATS AND MOLNIIA SATELLITES ARE GIVEN, AND THE INTERPRETATION OF EVIDENT FEATURES IS DEMONSTRATED.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

Acc. Nr.: AP0044048

Ref. Code: UR0011

JPRS 52052

Geological Interpretation of Space Photographs of the Earth

(Abstract: "Possibilities of Geological Interpretation of Space Photographs of the Earth," by B. V. Vinogradov and Al. A. Grigor'yev, Laboratory of Aerospace Geographic Methods, Leningrad State University; Moscow, Izvestiya Akademii Nauk SSSR, Seriya Geologicheskaya, No. 1, 1970, pp. 16-28)

The possibilities of geological interpretation of space photographs of the earth are reviewed. The text, photographs and bibliography indicate that the article is based largely on non-Soviet sources (the bibliography has two Russian, two German and thirteen American sources). The authors feel that space photographs can be used in geology for the following purposes: 1) detection of new and more precise study of known major structural forms, folded and faulted formations (particularly in inaccessible regions and on plains where they are masked by unconsolidated deposits); 2) determining the interrelationship between folded and faulted tectonic forms; 3) tracing macro- and mega-structural forms and studying major geological patterns (including distribution of minerals); 4) studying fissuring (at a planetary scale) and finding the relationship between

Reel/Frame
19770506

12

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

AP0044048

fissuring and other characteristics of geological structure; 5) tracing strata, suites and individual marking horizons for compiling regional geological maps; 6) investigating regions of major geological anomalies (magnetic, gravitational, etc.) and determining the interrelationship between these anomalies and other peculiarities of geological structure; 7) generalizing local data for compiling geological maps (up to a scale of 1:500,000 or more). Compilation of small- and intermediate-scale geological maps for poorly studied areas and revising existing maps; 8) for geological regionalization; 9) geological engineering regionalization, terrain passability studies, etc.; 10) comparative geological studies at a global scale and finding geological analogues for making various kinds of correlations (stratigraphic, tectonic, etc.) and for geological prediction; 11) compilation of a uniform geological map of the world at scales 1:1,000,000-1:2,000,000. It is paradoxical but a fact that with increasing distance from the earth, photographing it from considerably greater altitudes than before, more and better information is obtained concerning some aspects of geological structure.

2/2

19770507

di

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC: 621.762.2+539.67

BERKOVICH, I. I., VINOGRADOV, G. A. and KATASHINSKIY, V. P., Kalinin Polytechnic Institute; Institute of Problems of Material Science Academy of Sciences Ukrainian SSR

"Study of the Friction and Shearing Strength of Iron and Aluminum Powders"

Kiev, Poroshkovaya metallurgiya, No 11, Nov 71, pp 84-88

Abstract: Described are tests on the physical and mechanical properties of PZhlM-2 iron and AP-1 aluminum powders conducted on a RT-1 ring-shaped tribometer at pressures ranging from 0 to 500 kg/cm^2. Both the testing equipment and procedure are detailed. The kinetic curves of both internal and external frictions and shearing strength of the iron and aluminum powders are shown as a function of normal pressures. It was found that the value of the cohesion coefficient responsible for the structural strength of the material, increases with an increase in normal pressure while the internal friction coefficient remains almost constant. The friction and shear strength measurement results of both iron and aluminum powders at various pressures are presented in a table. (4 illustrations, 1 table, 4 bibliographic references).

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, G. A.

UDC 621.762.4

"Theory and Practice of Rolling Metal Powders"

Sovrem. probl. poroshk. metallurgii — V sb. (Modern Problems of Powder Metallurgy — collection of works), Kiev, Naukova Dumka Press, 1970, pp 61-72 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G439)

Translation: Construction, electrical engineering, friction and antifriction intermediate products -- sheets and strips, filtering plates for cleaning liquids, gases, and melts, products cooled by sweating, electrodes for electrochemical production, catalysts, pneumatic transport elements, drying, mixing and flotation machines -- are obtained by rolling powders. This is an incomplete list of possible areas of application of rolled products. Methods are presented for calculating the density and thickness of the strips with respect to given rolling conditions, and the relations between the pressure on the rolls and the density of the rolled products are established. A nomogram relating the thickness and density of the rolled products to the average pressure is derived. A formula is presented for calculating the elongation coefficient. The lag relations of the powder during rolling are established.

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, G. A., Sovrem. probl. poroshk. metallurgii, Kiev, Naukova Dumka Press, 1970, pp 61-72

The production flow charts for making rolled products from powders and the equipment on which the given process is realized are described. There are 5 illustrations. [Institute of Applied Mineralogy of the Ukrainian SSR Academy of Sciences].

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC 621:762

MUSIKHIN, A. M., VINOGRADOV, G. A., OGNEV, R. K., KOLOMOYETS, G. G., and TER-POGOSYAN, E. D.

"High-Speed Rolling of Iron and Titanium Powders"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 100-105

Translation: Results are given for research on conditions of rolling with forced feeding of metal powders. An empirical dependency is established between the thickness of the strip and the productivity of the mill as a function of the value of the roll solution and pressure of the powder support. It is demonstrated that the use of forced powder feeding makes it possible to increase the rolling speed to 3.2 meters per second and more, and to regulate the density of the strip within a wide range. Four illustrations, one table, and two bibliographic entries.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

UDC 621.762:669.462.295

USSR

MUSIKHIN, A. M., VINOGRADOV, G. A., OGNEV, R. K., KOLOMOYETS, G. G., and TER-POGOSYAN, E. D.

"High-Speed Rolling of Iron and Titanium Powders"

Sb. tr. Vses. n.-i. i proyektn. in-t titana [Collected Works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, pp. 100-105, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No. 1 G474 by the authors).

Translation: The use of forced powder feed allows the rolling speed to be increased to 3.2 m/sec and higher, i.e., to speeds higher than those ordinarily used by several orders of magnitude. The density of the raw rolled product with forced feed can be adjusted over broad limits by changing the powder feed force. Increasing the height of the powder column in the hopper over the mill with gravity powder feed cannot be used to replace forced powder feed, since it does not allow an increase in rolling speed and has no influence on the thickness and density of the raw rolled product. 4 figures.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC 621.382.002:539.234:539.216.22

PAVLOVA, Z. V., VISHNYAKOVA, Z. P., VINOGRADOV, G. B., and VISHNYAKOV, B. A.

"Production of Dielectric Films of Titanium Dioxide"

Moscow, Neorganicheskiye Materialy, Vol 6, No 12, Dec 70, pp 2207-2208

Abstract: TiO_2 films were produced by the method of pyrolysis of organotitanium compounds. The structure and composition of the films produced were tested by an electronographic method. Films were produced by pyrolysis of tetrabutoxytitanium (TBOT) in an atmosphere of nitrogen at 350-450°C. Substrates used were Ge, Si, and NaCl. The quality of the film is greatly influenced by the cleanliness of the initial surface. Dust and dirt on the substrate produce pores and defects in the film. The best properties were those of TiO_2 films grown at a substrate temperature of 350-400° C, t_{ev} = 120°C with a nitrogen flow rate of 80 l/hr.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR UDC: 621.373.001.24:621.372.413

VINOGRADOV, G. I., KREYNOVICH, Ya. R., RADETSKIY, M. N., SLUTSKIY, P. G., SHERAYZIN, A. K., CHISTYAKOV, V. A.

"A Device for Tuning Resonant Circuits"

USSR Author's Certificate No 280579, filed 5 Jan 67, published 17 Nov 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D384 P)

Translation: A device is proposed for tuning resonant circuits such as cavity circuits. The device contains a two-armed lever connected by a rod to the tuning element of the circuit to be adjusted, and resting on the cams of a discrete controlling mechanism. To improve the operating precision of the device, the two-armed lever is made in the form of a yoke equipped with regulating screws and connected to a set of levers whose spring-loaded shanks rest on the cams of the control mechanism. Two illustrations. V. P.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR UDC: 621.317.71:621.791.03

VINOGRADOV, G. V., IGNATKIN, Yu. N., and CHERNOV, V. D.

"Instrument for Measuring the Welding Current Amplitude in Low-Power Contact Machines"

Elektron. tekhnika. Nauch.-tekhn. sb. Tekhnol., organiz., proiz-va i oborud. (Electronics Engineering; Scientific-Technical Collection; Technology, Organization of Production, and Equipment) No 3(51), 1972, pp 41-43 (from RZh--Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 2, 1973, Abstract No 2A351)

Translation: A device is described for measuring pulse current amplitudes in welding small parts on a welding automaton of an automatic line for producing resistors of the VS type. Two illustrations, bibliography of one. Resume

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 026 UNCLASSIFIED

TITLE--EXTENSION OF ELASTIC LIQUIDS: POLYISOBUTYLENE -U- PROCESSING DATE--27NOV70

AUTHOR-(03)-VINOGRADOV, G.V., RADUSHKEVICH, B.V., FIKHMAN, V.D.

COUNTRY OF INFO--USSR

SOURCE--J. POLYMER SCI. PT.A-2 POLYMER PHYS. (USA), VOL. 8, NO. 1, P. 1-17 (JAN. 1970)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYISOBUTYLENE, MOLECULAR WEIGHT, DEFORMATION RATE, MATERIAL TESTING EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1096 STEP NO--US/0000/70/008/001/0001/0017

CIRC ACCESSION NO--AP0136516

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 026 UNCLASSIFIED

CIRC ACCESSION NO--AP0136516 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APPARATUS IS DESCRIBED AND A METHOD DISCUSSED FOR DETERMINING THE RHEOLOGICAL CHARACTERISTICS OF ELASTIC LIQUIDS DURING EXTENSION AT CONSTANT RATES OF DEFORMATION AND EXTENSION. THE MATERIAL STUDIED WAS POLYISOBUTYLENE OF MOLECULAR WEIGHT 7 TIMES 10 PRIME4. AT LOW CONSTANT DEFORMATION RATES STEADY FLOW REGIMES WERE ACHIEVED. WITH CORRESPONDING EQUILIBRIUM HIGH ELASTIC STRAINS. A DETAILED STUDY HAS BEEN MADE OF THE PROCESS OF ATTAINMENT OF STEADY FLOW REGIMES AND IT IS SHOWN THAT BEFORE STEADY FLOW IS REACHED THE CURVE OF LONGITUDINAL VISCOSITY VERSUS STRAIN PASSES THROUGH A MAXIMUM. AS THE RATE OF DEFORMATION RISES, THE STRAINS AT WHICH STEADY STATE FLOW REGIMES ARE ACHIEVED INCREASE, AND THE TIME REQUIRED TO REACH THESE REGIMES DECREASES. QUALITATIVELY THIS OCCURS IN THE SAME WAY AS UPON SHEAR. THE DEPENDENCE OF EQUILIBRIUM HIGH ELASTIC STRAINS (UNDER STEADY FLOW REGIMES) ON THE RATE OF DEFORMATION HAS BEEN DETERMINED. AT STEADY FLOW REGIMES THE STRESS DEPENDS LINEARLY ON THE RATE OF DEFORMATION AT LOW VALUES OF THE STRESS. UNDER SUCH CONDITIONS TROUTON'S FORMULA IS VALID. AT CONSTANT RATES OF EXTENSION THE STRESS VERSUS TIME CURVE PASSES THROUGH A MAXIMUM WHICH BECOMES HIGHER WITH INCREASING EXTENSION RATES. FACILITY: ACAD. SCI., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--TRANSITIONS IN POLYBUTADIENES -U-

AUTHOR-(04)-KULICHIKHIN, V.G., DZYURA, YE.A., MALKIN, A.YA., VINOGRADOV, G.V.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3), 568-73

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--POLYBUTADIENE, TRANSITION TEMPERATURE, MELTING POINT, CATALYTIC POLYMERIZATION, COMPLEX COMPOUND, THERMOMECHANICAL PROPERTY, DIELECTRIC PROPERTY, ISOMER, SYNTHETIC RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1209 STEP NO--UR/0459/70/012/003/0568/0573

CIRC ACCESSION NO--AP0116674

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116674

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GLASS TRANSITION TEMP. (T SUBG) AND M.P. OF STEREOREGULAR 1,4,POLYBUTADIENE RUBBERS (I) (PREPD. BY POLMN. IN THE PRESENCE OF COMPLEX CATALYSTS CONTG. TI SALTS AND HAVING VARIABLE AMTS. OF 1,4,CIS AND 1,4,TRANS ISOMERS) WERE STUDIED BY THERMOMECH., DIELEC., AND MECH. METHODS. THE M.P. OF I DECLINED WHEN EITHER CIS OR TRANS HOMOPOLYMER WAS INTRODUCED INTO THE POLYMER CHAIN. I FAILED TO CRYSTALLIZE WHEN 30-70PERCENT OF EITHER ISOMER WAS PRESENT. THE T SUBG STEADILY INCREASED WITH INCREASED CONTENT OF 1,4,TRANS UNITS. EXTRAPOLATION OF THE CURVE PLOTTED FOR T SUBG VS. CONTENT OF 1,4,TRANS UNITS GAVE THE T SUBG OF THE CIS AND TRANS ISOMERS AS NEGATIVE 100 AND NEGATIVE 75DEGREES, RESP. FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 016 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--MICROSTRUCTURE AND RHEOLOGICAL PROPERTIES OF POLYBUTADIENES -U-

AUTHOR-(03)-VINOGRADOV, G.V., MALKIN, A.YA., KULICHIKHIN, V.G.

COUNTRY OF INFO--USSR

SOURCE--J. POLYM. SCI., PART A-2 1970, 8(3), 333-53

DATE PUBLISHED--------70

SUBJECT AREAS--NAVIGATION, MATERIALS

TOPIC TAGS--RHEOLOGIC PROPERTY, MOLECULAR STRUCTURE, VISCOSITY, POLYBUTADIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0216 STEP NO--US/0000/70/008/003/0333/0353

CIRC ACCESSION NO--AP0113155

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 016 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0113155

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VISCOSITIES, RUBBERY DEFORMATIONS, DENSITIES, AND THEIR DEPENDENCE ON TEMP. WERE MEASURED FOR SEVERAL SERIES OF POLYBUTADIENES WITH MOL. WTS. RANGING FROM 5000 TO 400,000 AND DIFFERING IN PROPORTIONS OF CIS AND TRANS STRUCTURES (CIS CONTENT FROM 40 TO 95PERCENT). ON THE BASIS OF THE VISCOSITY MEASUREMENTS THE CRITICAL MOL. WT. M SUBC WAS DETD., CORRESPONDING TO A SHARP CHANGE IN THE NATURE OF THE VIXCOSITY VS. MOL. WT. DEPENDENCE. RUBBERY DEFORMATIONS ARE DISPLAYED PRONOUNCEDLY IN SPECIMENS WITH M LARGER THAN M SUBC AND ARE CLOSELY RELATED TO THE APPEARANCE OF NON NEWTONIAN FLOW. THE VALUE OF M SUBC DEPENDS ON THE RELATIVE CONTENT OF CIS AND TRANS FORMS. WHEN M LARGER THAN M SUBC, THE INITIAL VISCOSITY IS A PARAMETER SENSITIVE TO THE MICROSTRUCTURE OF POLYBUTADIENES, SO THAT AT A SINGLE MOL. WT., DEPENDING ON THE RATIO OF CIS AND TRANS UNITS, THE VISCOSITY MAY VARY OVER A MORE THAN TENFOLD RANGE. THE GLASS TRANSITION TEMP. AND ACTIVATION ENERGY OF VISCOUS FLOW RISE REGULARLY WITH INCREASING TRANS CONTENT IN THE POLYMER CHAIN, THESE PARAMETERS BECOMING INDEPENDENT OF THE MOL. WT. FOR SPECIMENS WITH M LARGER THAN M SUBC WITHIN A SERIES OF POLYBUTADIENES OF EQUAL MICROTACTICITY. THERMOMECH. INVESTIGATIONS OF POLYBUTADIENES ALSO MADE IT POSSIBLE TO DEFINE MORE ACCURATELY THE BOUNDARIES OF THE CRYSTN. REGION AND THE DEPENDENCE OF THE MELTING POINT ON THE MICROTACTICITY. THE RESULTS OBTAINED ARE DISCUSSED ON THE BASIS OF MODERN IDEAS OF POLYMER STRUCTURES.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--FLOW OF DYE PASTES OVER CYLINDRICAL CHANNELS -U-

AUTHOR-(03)-GORDIYEVSKIY, L.A., PEREPELKIN, I.B., VINOGRADOV, G.V.

COUNTRY OF INFO--USSR

SOURCE--INZHENERNO FIZICHESKIY ZHURNAL, 1970, VOL 18, NR 1, PP 146-149

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FLUID FLOW, DYE, FLUID VISCOSITY, AZO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1937 STEP NO--UR/0170/70/018/001/0146/0149

CIRC ACCESSION NO--AP0125526

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125526

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIG. 1. SCHEME OF EXPERIMENTAL INSTALLATION FOR STUDY OF PASTE FLOW OVER TUBES. FIG. 2. TRUE INVARIANT CURVES OF PASTE FLOW OF ACIDIC CLARET WITH DIFFERENT CONTENT OF DRY SUBSTANCES, D SUBR, SEC PRIME1 NEGATIVE, TAU R CYNE-CM PRIME2. FIG. 3. EFFECTIVE VISCOSITY OF DYE PASTES VERSUS CONTENT OF DRY SUBSTANCES. ETA, POISE; C, PERCENT. SUMMARY. THE STUDY OF AQUEOUS PASTES OF AZO DYES WITH ACIDIC CLARET AS AN EXAMPLE SHOWED THAT THESE ARE THE SYSTEMS WITH HIGHLY EXPRESSED VISCOSITY ANOMALY WHICH, HOWEVER, GIVE THE INVARIANT FLOW CURVES RELATIVE TO THE SIZES OF CAPILLARIES AND TUBES (DIAMETERS DIFFER BY 77 TIMES AND LENGTHS BY 87 TIMES). THIS ALLOWS THE DATA ON VISCOSIMETRY TO BE USED FOR CALCULATION OF PASTE FLOW OVER TUBES. THE DEPENDENCE OF VISCOSITY OF AQUEOUS PASTES ON CONCENTRATION IS FOUND.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EXTENSION OF ELASTIC LIQUIDS: POLYISOBUTYLENE -U-

AUTHOR-(03)-VINOGRADOV, G.V., RADUSHKEVICH, B.V., FIKHMAN, V.D.

COUNTRY OF INFO--USSR

SOURCE--J. POLYMER SCI. PT.A-2 POLYMER PHYS. (USA), VOL. 8, NO. 1, P. 1-17 (JAN. 1970)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYISOBUTYLENE, MOLECULAR WEIGHT, DEFORMATION RATE, MATERIAL TESTING EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1096 STEP NO--US/0000/70/008/001/0001/0017

CIRC ACCESSION NO--AP0136516

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 026 UNCLASSIFIED

CIRC ACCESSION NO--AP0136516 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APPARATUS IS DESCRIBED AND A METHOD DISCUSSED FOR DETERMINING THE RHEOLOGICAL CHARACTERISTICS OF ELASTIC LIQUIDS DURING EXTENSION AT CONSTANT RATES OF DEFORMATION AND EXTENSION. THE MATERIAL STUDIED WAS POLYISOBUTYLENE OF MOLECULAR WEIGHT 7 TIMES 10 PRIME4. AT LOW CONSTANT DEFORMATION RATES STEADY FLOW REGIMES WERE ACHIEVED. WITH CORRESPONDING EQUILIBRIUM HIGH ELASTIC STRAINS. A DETAILED STUDY HAS BEEN MADE OF THE PROCESS OF ATTAINMENT OF STEADY FLOW REGIMES AND IT IS SHOWN THAT BEFORE STEADY FLOW IS REACHED THE CURVE OF LONGITUDINAL VISCOSITY VERSUS STRAIN PASSES THROUGH A MAXIMUM. AS THE RATE OF DEFORMATION RISES, THE STRAINS AT WHICH STEADY STATE FLOW REGIMES ARE ACHIEVED INCREASE, AND THE TIME REQUIRED TO REACH THESE REGIMES DECREASES. QUALITATIVELY THIS OCCURS IN THE SAME WAY AS UPON SHEAR. THE DEPENDENCE OF EQUILIBRIUM HIGH ELASTIC STRAINS (UNDER STEADY FLOW REGIMES) ON THE RATE OF DEFORMATION HAS BEEN DETERMINED. AT STEADY FLOW REGIMES THE STRESS DEPENDS LINEARLY ON THE RATE OF DEFORMATION AT LOW VALUES OF THE STRESS. UNDER SUCH CONDITIONS TROUTON'S FORMULA IS VALID. AT CONSTANT RATES OF EXTENSION THE STRESS VERSUS TIME CURVE PASSES THROUGH A MAXIMUM WHICH BECOMES HIGHER WITH INCREASING EXTENSION RATES. FACILITY: ACAD. SCI., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EXTENSION OF ELASTIC LIQUIDS: POLYISOBUTYLENE -U-

AUTHOR-(03)-VINOGRADOV, G.V., RADUSHKEVICH, B.V., FIKHMAN, V.D.

COUNTRY OF INFO--USSR

SOURCE--J. POLYMER SCI. PT.A-2 POLYMER PHYS. (USA), VOL. 8, NO. 1, P. 1-17 (JAN. 1970)

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYISOBUTYLENE, MOLECULAR WEIGHT, DEFORMATION RATE, MATERIAL TESTING EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1096 STEP NO--US/0000/70/008/001/0001/0017

CIRC ACCESSION NO--AP0136516

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136516

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APPARATUS IS DESCRIBED AND A METHOD DISCUSSED FOR DETERMINING THE RHEOLOGICAL CHARACTERISTICS OF ELASTIC LIQUIDS DURING EXTENSION AT CONSTANT RATES OF DEFORMATION AND EXTENSION. THE MATERIAL STUDIED WAS POLYISOBUTYLENE OF MOLECULAR WEIGHT 7 TIMES 10 PRIME4. AT LOW CONSTANT DEFORMATION RATES STEADY FLOW REGIMES WERE ACHIEVED. WITH CORRESPONDING EQUILIBRIUM HIGH ELASTIC STRAINS. A DETAILED STUDY HAS BEEN MADE OF THE PROCESS OF ATTAINMENT OF STEADY FLOW REGIMES AND IT IS SHOWN THAT BEFORE STEADY FLOW IS REACHED THE CURVE OF LONGITUDINAL VISCOSITY VERSUS STRAIN PASSES THROUGH A MAXIMUM. AS THE RATE OF DEFORMATION RISES, THE STRAINS AT WHICH STEADY STATE FLOW REGIMES ARE ACHIEVED INCREASE, AND THE TIME REQUIRED TO REACH THESE REGIMES DECREASES. QUALITATIVELY THIS OCCURS IN THE SAME WAY AS UPON SHEAR. THE DEPENDENCE OF EQUILIBRIUM HIGH ELASTIC STRAINS (UNDER STEADY FLOW REGIMES) ON THE RATE OF DEFORMATION HAS BEEN DETERMINED. AT STEADY FLOW REGIMES THE STRESS DEPENDS LINEARLY ON THE RATE OF DEFORMATION AT LOW VALUES OF THE STRESS. UNDER SUCH CONDITIONS TROUTON'S FORMULA IS VALID. AT CONSTANT RATES OF EXTENSION THE STRESS VERSUS TIME CURVE PASSES THROUGH A MAXIMUM WHICH BECOMES HIGHER WITH INCREASING EXTENSION RATES. FACILITY: ACAD. SCI., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 046 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--HIGH ELASTIC DEFORMATION OF POLYMERS IN THE VISCOUS STATE -U-

AUTHOR-(04)-VINOGRADOV, G.V., MALKIN, A.YA., LEONOV, A.I., SHUMSKIY, V.F.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(5), 1044-50

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--ELASTIC DEFORMATION, BUTYL RUBBER, POLYISOBUTYLENE, VISCOUS FLOW, VISCOELASTICITY, ENTROPY, POLYMER RHEOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0730 STEP NO--UR/0459/70/012/005/1044/1050

CIRC ACCESSION NO--AP0136169

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 046 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136169

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HIGHLY ELASTIC DEFORMATIONS OF FLUID BUTYL RUBBER (I) AND POLYISOBUTYLENE (II) WERE STUDIED AS A FUNCTION OF TEMP. THE CHANGES IN INTERNAL ENERGY AND ENTROPY OCCURRING DURING A TRANSITION FROM A STATE OF REST TO A STATE OF VISCOUS FLOW AT VARIOUS TEMPS. AND THE SHEAR RATES MAY BE EVALUATED BY CONSIDERING THE VISCOELASTIC FLOW OF POLYMERS AS HAVING DEFINITE THERMODYNAMIC AND RHEOL. PARAMETERS. THE HIGHLY ELASTIC DEFORMATIONS OF FLUID I AND II WERE DISCUSSED. FACILITY: INST. NEFTEKHIM. SHIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 033 UNCLASSIFIED

TITLE--HIGH ELASTICITY, NORMAL AND SHEAR STRESSES ON SHEAR DEFORMATION OF LOW MOLECULAR WEIGHT POLYISOBUTYLENE -U-

PROCESSING DATE--23OCT70

AUTHOR-(03)-VINOGRADOV, G.V., MALKIN, A.YA., SHUMSKIY, V.F.

COUNTRY OF INFO--USSR

SOURCE--RHEOL. ACTA 1970, 9(2), 155-63

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELASTICITY, SHEAR STRESS, ELASTIC DEFORMATION, POLYISOBUTYLENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1642

STEP NO--GY/0000/70/009/002/0155/0163

CIRC ACCESSION NO--AP0125264

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 033 UNCLASSIFIED

CIRC ACCESSION NO--AP0125264 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HIGH ELASTIC DEFORMATIONS AND NORMAL AND SHEAR STRESSES WHICH DEVELOP DURING SHEAR FLOW OF LOW MOL. WT. POLYISOBUTYLENE VISCOELASTIC LIQ. WERE DETD. AT 20-100DEGREES, 10 PRIME3-10 PRIME2 SEC PRIME NEGATIVE1 SHEAR RATE INTERVAL, AND 10 PRIME3 TO 10 PRIME6 DYNES-CM PRIME2 STRESS INTERVAL. THE ONLY CRITERION FOR ATTAINMENT OF STEADY STATE FLOW CONDITION IS CONSTANCY OF NORMAL STRESSES; ELASTIC DEFORMATION AT TRANSIENT DEFORMATION REGIMES IS NOT PREDICTED BY KNOW THEORIES. NORMAL STRESSES ARE PROPORTIONAL TO THE SQUARE OF THE SHEAR STRESSES IN BOTH LINEAR AND NONLINEAR REGIONS OVER A WIDE RANGE OF SHEAR RATES. THE EFFECTS OF TEMP. ON THE NEWTONIAN VISCOSITY, COEFF. OF NORMAL STRESSES, AND HIGHLY ELASTIC DEFORMATIONS ARE DISCUSSED.

FACILITY: INST. PETROCHEM. SYN., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

Acc. Nr. AP0045178 Abstracting Service: CHEMICAL ABST.

5-70

Ref. Code UR0191

91217b Granulated copolymer of styrene with α-methylstyrene. Yartsev, I. K.; Kirillove, E. I.; Glagoleva, Yu. A.; Vasil'eva, T. A.; Yartseva, E. E.; Vinogradov, G. V. (USSR). Plast. Massy 1970, (1), 41-3 (Russ). The title copolymer (I) was pelletized in a ED-2M disc extruder and a BE-40 screw extruder and then subjected to irradn. in the air (from a PRK-2 lamp) at 25-30°. I films were also subjected to thermal aging at 60-200° for 3,000 hr. Light and thermal aging data revealed that I was best processed in the disc extruder. The pelletized I exhibited superior physicomech. properties and similar (to the prepelletized I) lightfastness and thermal stability.

CKJR

REEL/FRAME
19780078

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

Acc. Nr: AP0052540 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR 0459

101188j High elasticity of 1,4-polybutadienes of different microtacticity. Malkin, A. Ya.; Kulichikhin, V. G.; Zabugina, M. P.; Vinogradov, G. V. (Inst. Neftekhim. Sin. im. Topicheva, Moscow, USSR). Vysokomol. Soedin., Ser. A 1970, 12(1), 120-8 (Russ). The viscosity changes, viscoelastic deformation (γ) vs. shear rate ($d\gamma/dt$), γ vs. mol. wt., γ vs. shear stress, elasticity modulus vs. shear stress, the effect of 1,4-cis units content on the elasticity modulus, and related rheol. properties of 1,4-polybutadienes (I) were studied at 50°, 10^{-4}-10^{2} sec^{-1} $d\gamma/dt$, and 5 × 10^{2}-$10^{7.5}$ P viscosity ranges. Low mol. wt. I did not obey Hooke's shear law. There was a sharp difference in rheol. properties of I below and above a crit. mol. wt. value, the magnitude of which depended on the tacticity and on $d\gamma/dt$. In the low $d\gamma/dt$ region the above relations agreed with A. S. Lodge's theory (1964). Non-Newtonian flow begins after reaching the crit. mol. wt. and the crit. $d\gamma/dt$.

CPJR

REEL/FRAME
19821183

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

Acc. Nr. AP0045784 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code US0000

67415u Extension of elastic liquids: polyisobutylene. Vinogradov, G. V.; Radushkevich, B. V.; Fikhman, V. D. (Inst. Petrochem. Syn., Moscow, USSR). J. Polym. Sci., Part A-2 1970, 8, 1-17 (Eng). An app. is described and a method discussed for detg. the rheol. characteristics of elastic liqs. during extension at const. rates of deformation and extension. The material studied was polyisobutylene of mol. wt. 7×10^4. At low const. deformation rates steady-flow regimes were achieved, with corresponding equil. high elastic strains. A detailed study was made of the process of attainment of steady-flow regimes and it is shown that before steady flow is reached the curve of longitudinal viscosity vs. strain passes through a max. As the rate of deformation rises, the strains at which steady-state flow regimes are achieved increase, and the time required to reach these regimes decreases. Qual. this occurs in the same way as upon shear. The dependence of equil. high-elastic strains (under steady-flow regimes) on the rate of deformation was detd. At steady-flow regimes the stress depends linearly on the rate of deformation at low values of the stress. Under such conditions Trouton's formula is valid. At const. rates of extension the stress versus time curve passes through a max. which becomes higher with increasing extension rates.

RGGS

1/1

REEL/FRAME 19780777

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

Acc. Nr: AP0052539 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0459

101597s Changes in the viscoelastic properties of 1,4-polybutadienes during vulcanization. Kulichikhin, V. G.; Malkin, A. Ya.; Vinogradov, G. V. (Inst. Neftekhim. Sin. im. Topchieva, Moscow, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 129-34 (Russ). Samples of 1,4-polybutadiene rubber (I) were vulcanized at 80° using S-ZnO-$(Me_2NCS)_2S_2$ vulcanizing system. The changes of I viscosity, visco-elastic deformation, elasticity modulus, normal stress, tangential stress (required to produce a given deformation), and the amt. of sol. fraction in I with the vulcanization time had an induction period (θ). The viscosity θ decreased linearly with I mol. wt. increase. After θ was reached, the viscosity increased uniformly until the 3-dimensional I structure was established. The elasticity modulus had its max. at the gel point. CPJR

1/1

REEL/FRAME
19821182

7

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

Polymers

VINOGRADOV, G. V.

THE RHEOLOGY OF POLYMERS

(Symposium in Moscow)

[Article by Doctor of Physical and Mathematical Sciences A. Ya. Malkin, Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol [illegible], No 8, August 1972, pp 119-121]

Rheological investigations are being developed in two directions at the present time: firstly, as a component part of physicochemical work pursuing the goal of establishment of general correspondences between the molecular structure of a substance and its macroscopic properties and, secondly, as a section of the mechanics of continua which is interested in finding connections between the kinematic and dynamic parameters of flow and in solving the corresponding boundary problems and their application to analysis of concrete technological processes. At the regular (Seventh) symposium on the rheology of polymers, organized by the Institute of Petrochemical Synthesis imeni A. V. Topchiyev of the AS USSR and held on 10-14 April in Moscow, the main attention was given to the first direction of investigations. Participating in the sessions were over 500 persons, including a group of scientists from East Germany, Poland, Czechoslovakia and Bulgaria, about 100 reports were heard. Discussed at the symposium was a broad complex of problems connected with the physics, physical chemistry and mechanics of polymeric materials, study of the molecular nature of relaxation effects in macromolecular chains, and the construction of mechanical models for the quantitative description of the behavior of a polymer under different conditions of deformation with detailed comparison of the molecular parameters of reliably characterized samples and their viscoelastic properties. Discussed with special interest was the problem of the liquid crystalline state and the influence of the physical structure of the system on its rheological properties.

The symposium was opened with the addresses of greeting of K. A. Andrianov and A. Yu. Ishlinskiy, who emphasized the

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

(14)

comprehensive importance of rheological investigations to polymer sciences as a whole and numerous applications of high molecular compounds and compositions based on them for structural purposes. Then was heard the survey report of G. V. Vinogradov, who sketched contemporary concepts of the connection of the molecular structure and rheological properties of polymers. Systematic investigations of the viscoelastic properties and fluidity of monodisperse polymers with different flexibility of the chain, conducted in recent years, have made it possible to quantitatively estimate the role of the length of the molecular chain in manifestations of mechanical properties characteristic of polymeric systems. In particular, the limiting conditions of deformation, when the polymer still preserves fluidity and can be processed in stable conditions, have been established. Another aspect of that problem is connected with the determination of general regularities of the transition from the fluid into the highly elastic state as a function of the intensity of deformation and with finding a correlation between the behavior of the polymer in different states and of its structure.

The reports of Yu. Ya. Gotlib, G. M. Virshteyn, Yu. V. Anufriyeva and others were devoted to general problems of polymer physics in connection with study of the processes of viscoelastic and dielectric relaxation in different physical states and evaluation of the correspondence of those processes with the conformational properties of polymeric chains. Also belonging to the same "physical" direction in rheology was the report of S. Ya. Frenkel' on the problem of phase transformations arising as a result of deformation and their influence on the conditions and regime of flow of polymeric systems.

In a number of reports the strucutre of fluid polymers and the influence of the structure of the system on its rheological properties were discussed. Thus, A. A. Tager discussed in detail the correspondence of the structure and viscosity of solutions of polymers. The report of S. P. Papkov and co-authors presented the results of study of the rheological properties of anisotropic solutions of rigid-chain polymers which can form a liquid crystalline phase. Possible models of liquid crystals were examined by L. G. Shaltyko, and a hydrodynamic theory of their behavior was proposed by E. L. Aero and A. N. Bulygin. Structural problems connected with the liquid crystalline order were presented in survey form by I. G. Chistyakov, and the application of those concepts to the description of the intra- and submolecular liquid crystalline order was examined in the report of V. N. Tsvetkov and co-authors.

Also related to problems of polymer physics was the report of A. Ziabicki (Poland), who told about new results obtained by him in the theory of polymeric lattices. V. B.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 026 UNCLASSIFIED

TITLE--ON POLARIZATION PHENOMENA, ABSOLUTE PROBABILITIES AND ANISOTROPY OF THE MOSSBAUER EFFECT IN SIDERITE -U-

PROCESSING DATE--16OCT70

AUTHOR-(04)-GOLDANSKIY, V.I., MAKAROV, YE.F., SUZDALEV, I.P., VINOGRADOV, I.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 3, PP 760-765

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LIGHT POLARIZATION, ANISOTROPY, MOSSBAUER EFFECT, PROBABILITY, GAMMA QUANTA, IRON ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1733

STEP NO--UR/0056/70/058/003/0760/0765

CIRC ACCESSION NO--AP0103497

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 026

CIRC ACCESSION NO--AP0103497

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTS WHICH ARE SIMILAR TO OPTICAL POLARIZATION EXPERIMENTS HAVE BEEN CARRIED OUT FOR THE FIRST TIME WITH MOSSBAUER GAMMA QUANTA FROM FE PRIME57; UNIAXIAL SIDERITE (FECO SUB3) SINGLE CRYSTALS SERVED AS THE POLARIZER AND ANALYZER. ASYMMETRY OF THE TWO QUADRUPOLE DOUBLET PEAKS WAS FOUND TO DEPEND ON THE AZIMUTHAL ANGLE (A) OF ROTATION OF THE CRYSTAL AXIS OF THE ANALYZER RELATIVE TO THE POLARIZER. ON THIS BASIS THE ABSOLUTE MAGNITUDE OF THE PROBABILITY FOR THE MOSSBAUER EFFECT, F PRIME, IN FECO SUB3 AT ROOM TEMPERATURE AND FOR AN ANGLE BETWEEN THE SIDERITE CRYSTAL AXIS AND THE GAMMA QUANTUM BEAM THETA EQUALS 90DEGREES HAS BEEN DETERMINED. FOR THETA EQUALS 15, 30, 45 AND 90DEGREES THE PROBABILITIES F PRIME WERE ALSO DETERMINED FROM ASYMMETRY OF THE DOUBLETS AND ON BASIS OF THE TOTAL AREA OF THE TWO GAMMA RESONANT ABSORPTION SPECTRUM PEAKS.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR UDC 535.33/.34:539.196

VINOGRADOV, I. P., PIMENOV, YU. D.

"Luminescence of Donor-Acceptor Interaction of Aromatic Molecules With $AlCl_3$ and Aluminosilica Gel"

Leningrad, Vestnik leningradskogo universiteta, No 10, Part 2, May 1970, pp 32-37

Abstract: The partners in the molecular associations resulting from these interactions undergo marked structural changes which may lead to the formation of intermolecular compounds. In this paper the interactions of benzene, naphthalene, anthracene, and 3.6-diaminoacridine with strong acceptor molecules of $AlCl_3$ and alumosilica gel are studied. Such an analysis permits the determination of the ArH-acceptor type of molecular compound, often an intermediate product of various catalytic reactions. The article investigates systems obtained by alternating sublimation of aromatic molecules and $AlCl_3$ on a liquid air-cooled substrate, systems obtained as the result of aromatic molecular vapors in contact with $AlCl_3$ at room temperature, and systems formed by adsorption of reagents on alumosilica gel. The spectral method was used, with the spectra measured by an excitation

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, I. P., et al, Vestnik leningradskogo universiteta, No 10, Part 2, May 1970, pp 32-37

lamp of the DRSh-500 type through a Hilger monochromator with a KCl prism and a standard light filter. The modulation frequency of the excitation lamp was 200 Hz. Other details of the experimental methods and equipment are given. The authors conclude that one can assume the formation of carbonate ions of the aromatic molecules and positive molecular ions in the ArH-acceptor binary system.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

Acc. Nr: AP0045502 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code: UR0051

84610w Excitation of the luminescence of benzene derivatives by vacuum ultraviolet radiation. Vinogradov, I. P.; Dodonova, N. Ya. (USSR). *Opt. Spektrosk.* 1970, 28(4), 710-2 (Russ). The luminescence of C_6H_6 and its derivs. have been excited with uv radiation of 160, and, in some cases, 120 nm by using a H lamp and a vacuum monochromator. The luminophors were sublimed as thin films on liq.-N-cooled aluminized glass substrates prior to irradn. The spectra of C_6H_6, PhMe and diphenylmethane have a band at ~300 nm. All spectra except that of C_6H_6 have a clearly defined structure in the 400-500-nm region and have identical intensity distribution. This band appears immediately after the light source is turned on.

Boris H. Tytell

LD

REEL/FRAME 19780468

7

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/3 019 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--THE DEVELOPMENT OF MACHINE BUILDING IN 1970 -U-

AUTHOR--VINOGRADOV, K.K.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 2, 1970, PP 3-6

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--METALLURGIC MACHINERY, MOTOR VEHICLE, MACHINE TOOL INDUSTRY, FOOD INDUSTRY, METAL INDUSTRY, INDUSTRIAL PRODUCTION, TRACTOR, AGRICULTURAL MACHINERY, HARVESTING, RICE, CHEMICAL INDUSTRY, ECONOMIC PLANNING TECHNIQUE/(U)SKD5 GRAIN HARVESTING COMBINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0868 STEP NO--UR/0122/70/000/002/0003/0006

CIRC ACCESSION NO--AP0113723

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/3 019 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0113723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN DECEMBER 1969, THE SEVENTH SESSION OF THE SUPREEME SOVIET, USSR CONSIDERED AND RATIFIED THE PLAN FOR THE DEVELOPMENT OF THE NATIONAL ECONOMY OF THE USSR FOR 1970. ACCORDING TO THIS PLAN, THE OUTPUT OF THE MACHINE BUILDING AND METAL PROCESSING INDUSTRY IN 1970 SHOULD INCREASE BY APPROXIMATELY 9.2PERCENT OVER THE 1969 FIGURE. THE ELECTRONIC AND RADIO ENGINEERING INDUSTRY, INSTRUMENT PRODUCTION, MACHINE BUILDING FOR LIGHT INDUSTRY AND THE FOOD INDUSTRY, AND THE PRODUCTION OF MACHINES AND EQUIPMENT FOR THE CHEMICAL INDUSTRY WILL DEVELOP AT FASTER RATES THAN THE MACHINE BUILDING INDUSTRY AS A WHOLE. THE RATE OF DEVELOPMENT OF MOTOR VEHICLE INDUSTRY IS TO BE INCREASED. THE MOST IMPORTANT TASK FOR MACHINE BUILDING IS TO IMPROVE THE QUALITY OF ITS PRODUCTS AND TO ACCELERATE THE OUTPUT OF NEW TYPES OF MACHINERY AND EQUIPMENT. THE OUTPUT OF TECHNOLOGICAL EQUIPMENT FOR THE CHEMICAL INDUSTRY IS TO RISE BY 16.8PERCENT OVER 1969. THE MACHINE TOOL AND TOOL INDUSTRY WILL DEVELOP MORE RAPIDLY THAN THE BASIC BRANCHES OF MACHINE BUILDING AS A WHOLE. THE OUTPUT OF MACHINE TOOLS WILL RISE BY 6.7PERCENT OVER 1969, AND THAT OF FORGING AND PRESSING MACHINES, BY 6PERCENT. THE OUTPUT OF MACHINE TOOLS WITH DIGITAL PROGRAM CONTROL WILL INCREASE BY A FACTOR OF 3.2, THAT OF AUTOMATIC AND SEMIAUTOMATIC LINES FOR MACHINE BUILDING AND METAL PROCESSING WILL INCREASE BY 35.5PERCENT. THE PRODUCTION OF MECHANICAL PRESSES AND SPECIAL AUTOMATIC FORGE AND PRESS MACHINES WILL INCREASE BY 50PERCENT: THAT OF AUTOMATIC MULTIPOSITION SHEET STAMPING MACHINES WILL INCREASE BY 32PERCENT.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

3/3 019

UNCLASSIFIED

CIRC ACCESSION NO--AP0113723 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--THE OUTPUT OF TECHNOLOGICAL EQUIPMENT FOR CASTING PRODUCTION WILL INCREASE BY 17.6PERCENT OVER 1969, AND THAT OF AUTOMATIC LINES FOR THIS PURPOSE WILL ALMOST DOUBLE. THE OUTPUT OF COMPUTER TECHNOLOGY WILL INCREASE BY MORE THAN 40PERCENT, INCLUDED IN THIS, THE OUTPUT OF COMPUTERS WILL INCREASE BY 16.9PERCENT, AND THAT OF MACHINES FOR AUTOMATION OF THE CONTROL OF PRODUCTION PROCESSES AND INSTALLATIONS WILL INCREASE BY A FACTOR OF 2.2. THE OUTPUT OF MOTOR VEHICLES WILL INCREASE BY 9.6PERCENT, THAT OF TRUCKS BY 4.7PERCENT AND THAT OF PASSENGERS CARS BY 19.4PERCENT, AND OF BUSES BY 2.2PERCENT. TRACTOR OUTPUT IS TO INCREASE BY 3.3PERCENT OVER 1969. THE OUTPUT OF AGRICULTURAL MACHINERY IS TO BE 4.4PERCENT LARGER IN 1970 THAN IN 1969; THE OUTPUT OF SKD-5 GRAIN HARVESTING COMBINES IS TO INCREASE BY ALMOST 34PERCENT, THAT OF RICE HARVESTING COMBINES BY 50PERCENT, THAT OF BEET HARVESTING COMBINES FOR CONTINUOUS HARVESTING IS TO INCREASE BY A FACTOR OF 7.5. THE PRODUCTION OF MACHINERY FOR CONSTRUCTION, ROAD, AND COMMUNAL PURPOSES IS TO INCREASE BY 9PERCENT, WHEREAS THE PRODUCTION OF ELEVATORS IS TO INCREASE BY 14PERCENT. CAPITAL INVESTMENTS IN MACHINE BUILDING ARE TO BE INCREASED BY ALMOST 30PERCENT.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

V

UDC 621.771.2-55

DRALYUK, V. N., VINOGRADOV, L. G., GLEBOVSKIY, M. G.

"Design and Construction of Thickness Regulator at Input to Continuous Cold Rolling Mill"

Proizvo Krupa. Mashin. (Production of Large Machines) No 18, pp 83-96, 1969 (from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'naya Tekhnika, No 2, 1970, Abstract No 2A572 by YU. T.)

Translation: A system for automatic regulation of the thickness of a strip at the input to a continuous cold rolling mill is described, as planned for a number of new machines. The design of the system and the selection of the optimal amplification factor are described. The system is designed as an astatic system with transport delay. The automatic regulation system control signal acts on the compressing device of the first stand in accordance with information from the micrometer installed on this stand. Structural and schematic diagrams of the regulator are presented, as well as its output characteristics. Experimental data on the operation of the regulator are presented. Fourteen illustrations, four bibliographies.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

(1)

UDC 547.241:541.49

PUDOVIK, A. N., MURATOVA, A. A., KURAMSHIN, I. Ya., YARKOVA, E. G., and VINOGRADOV, L. I., Kazan State University imeni V. I. Ul'yanova - Lenina

"Reaction of o-Methylmethylphosphones of Dialkylphosphinic and Dialkylthiophosphonic Acids With Stannic Chloride and Stannic Bromide"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 5, 1972, pp 979-986

Abstract: The title reaction -- for alkyl = methyl, butyl, cyclohexyl, and phenyl -- proceeds in methylene chloride forming complexes of the general form $[R, R'P(O)OH]_2SnX_4$ or $[RR'P(O)SH]_2SnX_4$ for equimolar mixtures of the two starting compounds. IR studies of the products of a starting mixture having a 2:1 ratio of reactants indicate that dimerization has occurred. When the reaction occurs with the elimination of the halogen acids, the salt $[RR'P(O)]_2SnX_2$ is formed which indicates an intramolecular rearrangement resulting in a polymer. A number of conclusions about the nature of these complexes were drawn from detailed NMR and IR studies.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

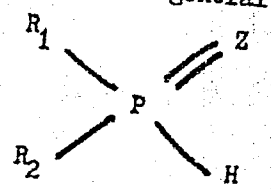
UDC 538.18-547.26'118.541.12

VINOGRADOV, L. I., ZIMIN, M. G., SAMITOV, YU. YU., and PUDOVIK, A. N.,
Kazan State University

"Spin-Spin Interaction of P^{31} Nuclei Directly Bonded to H^1 in Unsaturated Esters of Phosphoric Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 8, 1972, pp 1724-1727

Abstract: The value of the spin-spin coupling constant $^1J_{PH}$ is most influenced by the amount of S-character of the P-H bond. This parameter was measured for 12 compounds having the general formula



for Z=O and S and R_1 and R_2 being various alkyl, alkoxy, or halide-substituted alkyl groups. It was correlated with the orbital summetries and had values ranging from 734 to 431 hertz. $^1J_{PH}$ is directly proportional to the square 1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, L. I., et al., Zhurnal Obshchey Khimii, Vol 42(104), No 8, 1972, pp 1724-1727

of the order of the bond P_{Sh}^2 and to the cube of the effective nuclear charge Z_{eff}^3 and thus can be written as:

$$\frac{\Delta\, {}^1J_{PH}}{{}^1J_{PH}} \quad 2 \quad \frac{\Delta P_{Sh}}{P_{Sh}} \quad 3 \quad \frac{\Delta Z_{eff}}{Z_{eff}}$$

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

PUDOVIK, A. N., ZIMIN, M. G., SOBANOV, A. A., VINOGRADOV, L. I., and SAMITOV, Yu. Yu., Kazan' State University imeni V. I. Ul'yanov-Lenin

UDC 547.26'118

"Reaction of Dialkyl Phosphites With Ethyl Acetoacetate and the Dehydration of Esters of Alpha-hydroxyalkylphosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 2167-2174

Abstract: As a result of the reaction of dimethyl, di-n-propyl, diisopropyl, di-n-butyl phosphites and the partial ethyl ester of phenylphosphorous acid with ethyl acetoacetate in the presence of diethylamine, dialkyl alpha-hydroxy-beta-carbethoxyisopropylphosphonates and the ethyl ester of alpha-hydroxy-beta-carbethoxyphenylisopropylphosphonic acid were formed. The IR and PMR (Proton Magnetic Resonance) spectra of the products were studied and constants recorded. The PMR spectrum of the diethyl ester showed that it had two nonequivalent hydrogen atoms at the beta carbon, said to be due to an internal hydrogen bond. The concentration dependence of the IR spectrum of this compound was reported to indicate intermolecular bonds between the phosphorus-oxygen double bond and the hydroxyl group in the solid state and concentrated solutions. This was confirmed by ebulloscopy and cryoscopy. On heating the esters with a catalytic amount

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

PUDOVIK, A. N., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 2167-2174

of piperidine or sodium alkoxide they were dehydrated to dialkyl alpha--methyl-beta-carbethoxyvinylphosphonates. The capacity for this dehydration depends on the presence of a mobile methylene group. Beta-dialkylphospho--beta-butyrolactone was also formed as an impurity from more vigorous thermal action, but could be converted to the vinyl ester by heating with ethanol in the presence of sodium ethoxide. The dehydration was also carried out by heating in the presence of sodium carbonate.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

2

UDC 621.396.677:823.164

AMUNOV, A. G., GASICH, YE. V., ZAYATS, A. L., KOROBOV, B. S., DORFMAN, M. YE., VINOGRADOV, L. I.

"Rotating Mount"

USSR Author's Certificate No 271952, Filed 3 Mar 69, Published 1 Sep 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B86P)

Translation: A rotating mount for large-scale radio telescopes is introduced.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 018

TITLE--SOLVENT EFFECT ON SPIN SPIN COUPLING CONSTANTS IN PMR SPECTRA OF ORGANOPHOSPHORUS COMPOUNDS CONTAINING A P-O GROUP. I. GEMINAL CONSTANTS

AUTHOR-(05)-VINOGRADOV, L.I., SAMITOV, YU.YU., KESSEL, A.YA., NESTEROV, L.V., MARDANOVA, V.B.

COUNTRY OF INFO--USSR

SOURCE--TEOR. EKSP. KHIM. 1970, 6(1), 103-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLVENT ACTION, MAGNETIC RESONANCE, PROTON, SPECTRUM, ORGANIC PHOSPHORUS COMPOUND, DIELECTRIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605013/804 STEP NO--UR/0379/70/006/001/0103/0107

CIRC ACCESSION NO--AP0140345

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 018

UNCLASSIFIED

CIRC ACCESSION NO--AP0140345 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. J SUBP-C-H CONSTS. WERE MEASURED FOR MEPOCL SUB2, MEPOCLOPH, MEPO(OPH) SUB2, MEP(O)CINET SUB2, AND MEP(O)(NET SUB2)OPH IN 8 ORG. SOLVENTS. CORRELATIONS J SUBP-C-H VS. (EPSILON MINUS 1)-(EPSILON PLUS N PRIME2-2) ARE DISCUSSED, WHERE EPSILON EQUALS DIELEC. CONST. OF SOLVENT. FACILITY: KAZAN. GOSUNIV., KAZAN, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

UDC 538.27

USSR

VINOGRADOV, L. I., SAMITOV, YU. YU., KESSEL', A. YA., NESTEROV, L. V., ~~and MARDANOVA~~, V. B., Kazan' State University, Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR, Kazan'

"Effect of Solvent on Spin-Spin Coupling Constants in PMR Spectra of Some Organophosphorus Compounds Containing P=O Group. I. Geminal Constants J_{P-C-H}"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 6, No 1, Jan-Feb 70, pp 103-107

Abstract: A study was made of the effect of nonaromatic and aromatic solvents on the geminal spin-spin coupling constant of P^{31} and H^1 nuclei in CH_3POCl_2, $CH_3POClOPh$, $CH_3PO(OPh)_2$, $CH_3POClN(C_2H_5)_2$ and $CH_3PON(C_2H_5)_2OPh$. There was found to be a linear decrease in J_{P-C-H} with an increase in the electric field of the reaction, with the decrease being sharper in aromatic solvents. It is concluded that a

1/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, L. I., et al., Teoreticheskaya i Eksperimental'naya Khimiya, Vol 6, No 1, Jan-Feb 70, pp 103-107

positive sign is likeliest for the spin-spin coupling constant. Two possible mechanisms for the spin-spin interaction through the pi-electron system of the aromatic ring are suggested to explain the increase in J_{P-C-H} as Cl atoms are displaced by OPh:

1. The spin-spin interaction results from the pi-electron current induced by the magnetic moment of the nucleus in the aromatic ring, creating a local field on the second nucleus.

2. The spin-spin interaction occurs through the pi-electron system of the aromatic ring according to the mechanism suggested by H. M. McCONNELL for a long-range proton-proton interaction in aromatic systems. This mechanism is apparently realized in the compounds investigated here.

2/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, L. I., et al., Teoreticheskaya i Eksperimental'naya Khimiya, Vol 6, No 1, Jan-Feb 70, pp 103-107

An explanation is given for some peculiarities in the variation of the reactivity of the studied compounds.

3/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 028 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ABSORPTION OF NITROGEN BY A CONTINUOUSLY RENEWED TITANIUM FILM -U-

AUTHOR-(03)-BIRYUKOVA, N.YE., VINOGRADOV, M.I., YEFIMOV, M.N.

COUNTRY OF INFO--USSR

SOURCE--ZHUR. FIZ. KHIM., JAN. 1970, 44, (1), 145-149

DATE PUBLISHED----JAN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--NITROGEN, ABSORPTION, TITANIUM, SURFACE PROPERTY, CHEMICAL REACTION MECHANISM, METAL FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0247 STEP NO--UR/0076/70/044/001/0145/0149

CIRC ACCESSION NO--AP0124009

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 028

UNCLASSIFIED

CIRC ACCESSION NO--AP0124009 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISMS RESPONSIBLE FOR THE ABSORPTION OF N BY A TI FILM WERE STUDIED, THE FILM BEING CONTINUOUSLY RENEWED IN ORDER TO PREVENT THE ACCUMULATION OF OXIDES AND OTHER REACTION PRODUCTS. BETWEEN MINUS 196 AND PLUS 200DEGREESC THE MECHANISM WAS AS FOLLOWS: (I) N MOLECULES WERE PHYSICALLY ADSORBED ON THE SURFACE OF THE FILM; (II) THE PHYSICALLY ADSORBED MOLECULES WERE THEN CONVERTED INTO THE MOLECULAR CHEMISORBED STATE, RETAINING THE MOBILITY OF CHEMISORBED MOLECULES; AND (III) THE MOLECULES WERE THEN CONVERTED INTO AN ATOMIC CHEMISORBED STATE, WITH THE FORMATION OF AN ADSORBED LAYER FIRMLY ATTACHED TO THE SURFACE.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

VINOGRADOV, N. V., and BOBROV, V. A., VNIINK Kishinev

UDC 620.179.16

"Estimate of the Correlation of Ultrasonic Signal Amplitude with the Bonding Strength of Layers of a Bimetal Produced by Explosive Welding"

Sverdlovsk, Defektoskopiya, No 5, Oct 73, pp 104-108

Abstract: Using the results of experimental investigations, a coefficient of correlation of the ultrasonic signal amplitude with the bonding strength of layers of a bimetal, produced by explosive welding, is established. The interfering factors in the establishment of the correlation are considered.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/2 040 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--"STEAM PIPE DEFECTOSCOPY" -U-

AUTHOR-(04)-VINOGRADOV, N.V., KISHINEVSKAYA, Z.M., KHASNASH, T.V., SHVARTSMAN, V.YA.

COUNTRY OF INFO--USSR

SOURCE--SVERDLOVSK, DEFEKTOSKOPIYA, NO. 1, 1970, PP 8-10

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT, ELECTRONICS AND ELECTRICAL ENGR., MATERIALS

TOPIC TAGS--NONDESTRUCTIVE TEST, ULTRASONIC INSPECTION, QUALITY CONTROL, AUTOMATIC CONTROL SYSTEM, TEST INSTRUMENTATION, METAL ROLLING, HOT WORKING, METAL PIPE/(U)VINTZ ULTRASONIC TEST INSTRUMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0138 STEP NO--UR/0381/70/000/001/0008/0010

CIRC ACCESSION NO--AP0100669

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/2 040 UNCLASSIFIED

CIRC ACCESSION NO--AP0100669 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DESCRIPTION OF THE VINT 2 DEFECTOSCOPE, DEVELOPED BY THE ALL UNION SCIENTIFIC RESEARCH INSTITUTE. THIS INSTRUMENT WAS DESIGNED FOR SEMI AUTOMATIC ULTRASONIC QUALITY CONTROL OF SEAMLESS HOT ROLLED PIPES 325-560 MM IN DIAMETER, A WALL THICKNESS OF 8-70 MM, AND A LENGTH OF 2.5-12.5 M. THE DEVICE PERMITS THE USE OF THE SAME ROLLER CONVEYORS WITHOUT RECONSTRUCTION, REQUIRES NO ADDITIONAL PRODUCTION SPACE, AND ELIMINATES THE DEFECTS CONNECTED WITH THE PREVIOUSLY USED MANUAL TUBE CONTROL SUCH AS SUBJECTIVE ESTIMATES OF CONTROL RESULTS, INABILITY OF THE OPERATOR TO CATCH DEFECTS, NO AUTOMATIC SIGNALING OF DEFECTS, ETC. THE DEVICE PERFORMS ITS CONTROL FUNCTION BY THE PULSE ECHO METHOD IN THE CONTACT VARIATION, WITH THE INDUSTRIAL WATER SUPPLY AS THE CONTACT FLUID. IT CONSISTS OF ELECTRONIC, MECHANICAL, AND SONIC SECTIONS, EACH OF WHICH IS EXPLAINED IN THE TEXT. THE TECHNICAL SPECIFICATIONS OF THE DEVICE ARE LISTED. IT IS ASSERTED THAT IT CAN ALSO BE USED FOR QUALITY CONTROL OF OTHER GRADES OF PIPE WITH ONLY SLIGHT STRUCTURAL CHANGES.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

USSR

UDC 539.376+532.135

VINOGRADOV, O. G., RABKIN, M. A.

"On the Dynamic Similarity of Viscoelastic Bodies"

V sb. Dinamika gidrotekhn. sooruzh. (Dynamics of Hydroengineering Structures -- Collection of Works), Moscow, 1972, pp 27-30 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V538)

Translation: Conditions for the dynamic similarity of two viscoelastic bodies making harmonic oscillations are obtained by the application of the correspondence principle, i.e., by the substitution of elastic constants in the similarity conditions for elastic bodies with complex frequency functions. I. I. Gol'berg.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

1/3 020 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--DIURNAL CHANGE IN DIRECTION OF THE POLARIZATION AXIS OF PCL PULSATIONS -U-

AUTHOR-(03)-VINOGRADOV, P.A., VINOGRADOVA, V.N., GORIN, V.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 3, 1970, PP 557-558

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--DIURNAL VARIATION, MICROPULSATION, GEOMAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0524 STEP NO--UR/0203/70/010/003/0557/0558

CIRC ACCESSION NO--AP0132719

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5

2/3 020 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132719

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE IS A DIURNAL CHANGE IN THE MAIN AXIS OF THE POLARIZATION ELLIPSE FOR PCL PULSATIONS: CONSTRUCTION OF POLARIZATION ELLIPSES OF THE H VECTOR OF THE PCL FIELD FOR SOGRA AND IRKUTSK STATIONS REVEALED THAT THE DIRECTION OF THE MAEN AXIS OF THE POLARIZATION ELLIPSE CHANGES AT 0500-0800 (LOCAL SOLAR TIME). IN THE EVENING AND NIGHTTIME HOURS THE AXIS OF PCL POLARIZATION IS DIRECTED TO THE NE, EARLY IN THE MORNING; PRIMARILY TO THE N, AND DURING THE DAYTIME NNW. HOWEVER, UNTIL NOW THERE HAS BEEN EXPERIMENTAL DOCUMENTATION ONLY FOR A MORNING INTERVAL OF ROTATION OF THE SIGN OF THE ANGLE OF DEVIATION OF THE MAIN AXIS OF THE POLARIZATION ELLIPSE FROM THE MAGNETIC MERIDIAN, ALTHOUGH IT HAS BEEN POSTULATED THAT THIS ALSO OCCURS IN THE INTERVAL 1700-2000 HOURS. PCL PULSATIONS ARE SPORADIC AND THEIR APPEARANCE CANNOT BE PREDICTED, ALTHOUGH TIMES FAVORABLE FOR OBSERVATION ARE KNOWN. MOREOVER, THE PERIOD 1700-2000 IS THE MINIMUM ON THE CURVE OF DIURNAL DISTRIBUTION OF PCL OCCURRENCE. CAREFUL STUDY OF RECORDS REVEALED THAT AT ABOUT 1800 THERE IS A GRADUAL STABILIZATION OF DELTA PHI AND E SUBX -E SUBY; DELTA PHI EQUALS 180DEGREES IS TYPICAL, ALTHOUGH 140DEGREES LESS THAN OR EQUAL TO DELTA EPSILON LESS THAN OR EQUALS TO 230DEGREES IS ALSO OBSERVED. THE MEAN DIRECTION OF THE POLARIZATION AXIS WITH THE EASTWARD DIRECTION FORMS AN ANGLE MINUS 9DEGREES (AXIS DEFLECTED TO THE SOUTH). THE DIRECTION OF THE POLARIZATION AXIS AT DIFFERENT TIMES WAS: 1600-1630, PLUS 30DEGREES; 1630-1700, PLUS 36DEGREES; 1700-1730, PLUS 39DEGREES; 1750-1800, MINUS 10DEGREES; 1800-1815, MINUS 7DEGREES.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520002-5"