"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D. B.

USSR/Physics - Phosphors Nov 50
Photoconductivity

"Comparison of Photoconductivity Relaxation With Phosphorescence Relaxation," D. B. Gurevich, N. A. Tolstoy, P. P. Feofilov

"Zhur Eksper i Teoret Fiz" Vol XX, No 11, pp 1039-1046

Compares experimental laws governing kinetics of photoconductivity with experimental laws governing kinetics of luminescence. Establishes parallelism of these laws. Calculates

169T107

USSR/Physics - Phosphors (Contd) Nov 50

luminescence relaxation of cadmium sulfide from its photoconductivity relaxation. Submitted 4 Apr 50.

169T107

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CA

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Luminescence and photoconductivity of cadmium sulfide. D. B. Gurevich, N. A. Tolstol, and P. P. Feofilov. *Doklady Akad. Nauk S.S.S.R.* 71, 29-32(1950). Measurements on CdS confirmed the previously (*C.A.* 43, 6666; Arkhangel'skaya, *et al.*, *ibid.* 64, 187(1948)) established finding that the relaxation of the "nonlinear" photocond. $\Delta\sigma$ (i.e. the photocond. nonlinear with the intensity E of the exciting light), and that of the brightness I of luminescence, follow the same kinetic law. The fall of the former with time t obeys $\Delta\sigma \sim \sqrt{E}/(1 + bt)^{\alpha}$, where $b \sim \sqrt{E}$, whereas $I \sim E/(1 + at)^{\alpha}$, where $a \sim \sqrt{E}$, and the exponents α and β are independent of E. The total light emitted $L = \int_t^{\infty} I(t)dt$ is proportional to $\sqrt{E}/(1 + at)^{\alpha-1}$, which is analogous to the law of decay for $\Delta\sigma$, and identical with it if $a = b$ and $\beta = \alpha - 1$. These equalities were confirmed experimentally for CdS excited in the long-wave region, Hg lines 578 and 546 mμ; in this region, I_0 is proportional to E, and $\Delta\sigma_0$ to $E^{0.9}$ (in some samples to $E^{0.6}$), and the exptl. $\alpha = 1$ and β for the same sample are equal within the limits of exptl. accuracy. This indicates that the no. of excited electrons which det the total light stored is proportional, and possibly equal, to the no. of electrons detg the photocond. The same results are found in excitation with the pure 578- or 546-mμ radiation. In excitation with the short-wave range (Hg lines 436, 405, 366, and 313 mμ), the normal stationary relations cease to be valid, as $I_0 \sim E^{p}$, with $p = 0.85 \pm 0.07$, and $\Delta\sigma_0 \sim E^{q}$, with $q = 0.77$–0.83; in this region, α remains fairly const., but β increases to 0.61–0.66, and consequently $\alpha - 1 < \beta$. This deviation may be due to a concn. of the absorption in the surface layer. The identity of the decay laws for I and for $\Delta\sigma$ leads to the conclusion that, in the course of the relaxation process, the ratio of the no. of electrons in the conduction zone and their no. at the trapping levels remains const., i.e. that the equil. is established instantaneously. N. Thon

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USSR/Physics - Photoconductivity 21 May 50

"Magnitude of Dark Conductivity as a Criterion of Stationary and Relaxation Properties of Photoconductivity," D. B. Gurevich, N. A. Tolstoy

"Dok Ak Nauk SSSR" Vol LXXII, No 3, pp 473-476

FA 175T83

Semiconductive photoconductive cells are divided into 2 classes: (1) exponential and (2) hyperbolic. The 1st are substances whose relaxation of photocond is $\Delta\sigma \sim E \cdot \exp(-t/T)$; and the 2d, $\Delta\sigma \sim E \cdot (1-\exp(-t/T))$. Here, stationary photocond $\Delta\sigma_0$ is proportional to illumination E, and relaxation time T is independent of E. Generalizes here the above 2 basic

USSR/Physics - Photoconductivity (Contd) 175T83 21 May 50

relations, to find more complicated relations among $\Delta\sigma_0$, $\Delta\sigma$, E, t, T. Submitted 23 Mar 50 by Acad S. I. Vavilov.

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Photoelectric recording of Raman spectra in polarized light. Yu. S. Bobovich and D. B. Gurevich. Doklady Akad. Nauk S.S.S.R. 85, [illegible]; Science Abstr. 56A, 975(1953).—Light from 2 arch-form lamps is passed through polaroid (hepatite) film filters formed into tubes surrounding the cuvette of soln.; exposures are made 1st with the parallel and then with the perpendicular component of the polarized light incident on the soln. by suitable disposition of the filters. After being scattered from the cuvette, the light passes into an entry collimator 1.5 cm. in. diam., and of 50-cm. focal length, and falls on to a grating 8 X 7.5 sq. cm. area, with 600 lines/mm. (concn. of energy in one of the 2nd orders at 4359 A. is 60%). The linear dispersion in the 2nd-order spectra is 8 A./mm. Scanning is effected by rotation of the grating, connected to the recording drum through a reducing gear; light reaches the drum from the grating after passage through a photomultiplier (fed at 1000 v. and having an integral sensitivity of 30 amp./lumen, and a dark current of 2.2×10^{-8} amp.) and reflection from the mirror of a galvanometer of sensitivity 4×10^{-8} amp. The linear calibration curve for correcting the observed to the true degree of depolarization is reproduced, along with an example of a record of a Raman spectrum for CCl_4.

K. L. C.

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GUREVICH, D. B.

USSR

539.132

3714. Rotational isomerism of 1,2 dichloroethane and 1,2 dibromoethane. YU. A. PENTIN, YA. S. BOBOVICH, D. B. GUREVICH AND V. M. TATEVSKII. *Dokl. Akad. Nauk SSSR*, 89, *No.* 3, 435-8 (1953) *In Russian.* English translation, *U.S. National Sci. Found. NSF-tr-38.*

The Raman spectra have been recorded photoelectrically at various temperatures between 12 and 132°c. From the relative intensities of the two peaks in each spectrum corresponding to the C-halogen bond vibrations of the two isomers of each compound (at 654 and 754 cm^{-1} for dichloroethane, and at 551 and 659 cm^{-1} for dibromoethane) at the different temperatures, a value close to 0 cal/mole was derived for the heat of isomerization of the dichloro, and of 770 ± 60 cal/mole for the dibromo derivative; this latter figure agrees well with some other published figures, and it is considered that the value of 2420 cal/mole, published by Frost (*Dokl. Akad. Nauk SSSR*, 60, 387 (1948)) is erroneous.

R. C. MURRAY

9 Chem

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

USSR/Physics - Photoelectric method

FD-1486

Card 1/1 : Pub 146-9/20

Author : Bobovich, Ya. S., and Gurevich, D. B.

Title : Application of photoelectric recording method molecular analysis by means of Raman spectra of scattering of light

Periodical : Zhur. eksp. i teor. fiz., 27, 318-332, Sep 1954

Abstract : Photoelectric recording equipment with a wide-aperture monochromator for weak spectra in the visible band is described. The equipment is tested in various applications to the analysis of hydrocarbon mixtures and quantitative measurements of depolarization degrees of lines of Raman spectra. Indebted to Prof V. K. Prokof'yev. Twenty-six references including 11 foreign.

Institution :

Submitted : September 4, 1953

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

BOBOVICH, Ya.S.; GUREVICH, D.B.

Use of current lumen-output dependent photoelectrically recording monochromators in the spectroscopy of Raman spectra. Izv. AN SSSR Ser. fiz. 19 no.1:48-49 Ja-F '55. (MIRA 8:9)
(Spectrum analysis) (Spectrometer)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.B.; YESIN, R.A.; PROKOF'YEV, V.K.

Some properties of low-voltage electric impulse discharges. Izv. AN SSSR. Ser. fiz. 19 no.1:64-65 Ja-F '55. (MLRA 8:9)

(Spectrum analysis) (Spectrometer)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

AUTHORS: Gurevich, D.B. and Prokof'yev, V.K. 51-4-2/25

TITLE: Distribution of temperature in the plasma of low-voltage and high-voltage spark discharges. (Raspredeleniye temperatury v plazme nizkovol'tnogo i vysokovol'tnogo iskrovykh razryadov.)

PERIODICAL: "Optika i Spektroskopiya" (Optics and Spectroscopy) 1957, Vol.2, No.4, pp.417-420 (U.S.S.R.)

ABSTRACT: Spectral methods of temperature measurement give values of 7000-9000°K for spark discharges even though the latter may be very powerful with, say, 7500 A peak current and 15 microsecond duration. The form of the spectrum, the conductivity and the related extent of ionization in powerful sparks suggest much higher temperatures. The temperature of a spark changes very rapidly in time and space. To study these changes spark discharges between iron electrodes were investigated. Two Cu I lines (5106 and 5153 Å) were two N II lines (5045 and 5179 Å) were used. A diffraction grating spectrograph with 7 A/mm dispersion was used. It had a system of exit slits equipped with photomultipliers followed by oscillograph recording. A narrow region of the discharge could be selected for study. Single discharges at low voltages : 250 V and 1000 μF (the energy stored in capacitors was about 30 joules) and

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Distribution of temperature in the plasma of low-voltage and high-voltage spark discharges. (Cont.) 51-4-2/25

at high voltages : 6.5 kV and 6.5 μF (again the energy was about 30 joules) were studied. The self-inductance in both cases was about 5 μH. The spectral temperature measurements took about 10 μsec in sparks whose duration was several hundred microseconds. The low-voltage discharges were aperiodic, the high-voltage ones oscillatory. In the latter case the Cu I line intensities did not and the N II ones did become zero at the current minima. The duration of the Cu sparks was longer than that of the N sparks. The intensity of the N sparks was highest at the beginning of the discharge. Temperatures calculated from the Cu I lines, ranging from 5000 to 9000°K, are graphed as functions of time for various distances ℓ (0 to 14 mm) from the electrodes. For the low-voltage sparks at small ℓ the Cu I temperature rises with time for about 400 μsec from about 5500 to 7000°K. For medium ℓ the temperature rises to a maximum of 9500°K after 200 μsec and then falls to near 5000°K. For large values of ℓ the temperature falls with time from 7000°K or remains constant at about 7000°K. For the high-voltage sparks the Cu I temperature does not

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Distribution of temperature in the plasma of low-voltage and high-voltage spark discharges. (Cont.) 51-4-2/25

depend on the capacitor voltage, which was varied from 2100 to 6300 V, and therefore the temperature does not depend on the energy supplied or the current flowing. At small distances (ℓ = 0 to 1 mm) from the electrodes the spectral Cu I temperatures were higher at the current minima than at the current maxima. The converse was found to hold for about ℓ = 2 mm. The temperatures for ℓ from 0 to 2 mm were between 5000 and 9000°K during the first 200 μsec. At ℓ = 4 mm or more the light emission ceased to be oscillatory and the Cu I temperature varied between 7000 and 9000°K with either a maximum at 100 μsec or a continuous fall with time. Only one value of the N II temperatures is quoted: 32000°K for ℓ= 0 in low-voltage sparks at the end of the discharge (t = 400 μsec). Some effects of the electrode polarity were also found. There are 3 figures, 2 tables, 9 references (4 of which are Slavic)

SUBMITTED: September 6, 1956.

AVAILABLE: Library of Congress

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GUREVICH, D.B.

24(7) PHASE I BOOK EXPLOITATION SOV/2700

Lvov. Universitet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii, 1956. t. II: Atomnaya spektroskopiya (Materials of the 10th All-Union Conference on Spectroscopy, 1956. Vol 2: Atomic Spectroscopy) /Lvov/ Izd-vo L'vovskogo univ., 1958. 568 p. (Series: Its: Fizicheskiy sbornik, vyp.4(9)) 3,000 copies printed.

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii.

Editorial Board: G.S. Landsberg, Academician, (Resp. Ed.); B.S. Neporent, Doctor of Physical and Mathematical Sciences; I.L. Fabelinskiy, Doctor of Physical and Mathematical Sciences; V.A. Fabrikant, Doctor of Physical and Mathematical Sciences; V.G. Koritskiy, Candidate of Technical Sciences; S.M. Rayskiy, Candidate of Physical and Technical Sciences; L.K. Klimovskaya, Candidate of Physical and Mathematical Sciences; V.S. Miliyanchuk (Deceased), Doctor of Physical and Mathematical Sciences; A.Ye. Glauberman, Doctor of Physical and Mathematical Sciences; Ed.: S.L. Gazer; Tech. Ed.: T.V. Sarangyuk.

PURPOSE: This book is intended for scientists and researchers in the field of spectroscopy, as well as for technical personnel using spectrum analysis in various industries.

COVERAGE: This volume contains 177 scientific and technical studies of atomic spectrography presented at the 10th All-Union Conference on Spectroscopy in 1956. The studies were carried out by members of scientific and technical institutes and include extensive bibliographies of Soviet and other sources. The studies cover many phases of spectroscopy: spectra of rare earths, electromagnetic radiation, physicochemical methods for controlling uranium production, physics and technology of gas discharge, optics and spectroscopy, abnormal dispersion in metal vapors, spectroscopy and the combustion theory, spectrum analysis of ores and minerals, photographic methods for quantitative spectrum analysis of metals and alloys, spectral determination of the hydrogen content of metals by means of isotopes, tables, and atlases of spectral lines, spark spectrographic analysis, statistical study of variation in the parameters of calibration curves, determination of traces of metals, spectrum analysis in metallurgy, thermochemistry in metallurgy, and principles and practice of spectrochemical analysis.

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Materials of the 10th All-Union Conference (Cont.) SOV/2700

Zimin, V.N. Mechanism of the Entry of Electrode Substance Into the Luminous Cloud of a Condensed Spark Discharge 161

Martinkov, Ye. G. Studying the Spark Discharge in Regions Around Electrodes by the Spectral Scanning Method 164

Gurevich, D.B., and V.K. Prokof'yev. Temperature Distribution in Low-voltage and High-voltage Spark Discharge Plasma 166

Voymar, A.O. Simultaneous Application of Spectrographic, Microchemical, Electrophoretic, and Computing Methods for the Determination of Microelements of Low Concentration in Biological Specimens 170

Abramson, I.S., and A.N. Mogilevskiy. High-voltage Spark Discharge Generator With Electronic Control 173

Korovina, I.A., L.V. Lipis, and V.V. Fomin. Ultraviolet Absorption Spectra of Plutonium Compounds 175

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Translation from: Referativnyy zhurnal, Mekhanika, 1960, No. 4, p. 111, # 4984

AUTHORS: Gurevich, D.B., Prokof'yev, V.K., Snigirev, Yu.A.

TITLE: Photoelectric Devices for Recording the Spectra of Luminosity of Momentary Processes

PERIODICAL: Tr. Komiss. po pirometrii pri Vses. Nauchno-issled. in-te metrol., 1958, sb. 1, pp. 51-56

TEXT: The authors point out that the use of devices with photoelectric recording represents the most effective mode of measuring the radiation intensity with resolution in time. However, the photoelectrical receiver records only one spectral line or a narrow section of the continuous spectrum. If it is necessary to obtain knowledge on the entire spectrum or on certain of its sections, either the transposition of the spectrum before the exit slot of the monochromator may be accomplished (scanning), or several exit slots, i.e., the multichannel record scheme, may be used. Two devices are described in the article, which use both of the modes of recording. One of the devices is a four-channel photoelectric spectrometer and analyzes the wide spectral region from 12,000 to

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Photoelectric Devices for Recording the Spectra of Luminosity of Momentary Processes

3,600 Å. The light is dispersed by a diffraction grating. The exit slots are able to single out any four lines or two lines and two sections of the background in their vicinity. The light fluxes singled out by the slots get into photomultipliers; the photocurrent is amplified and fed to oscillographs, the screen images of which are photographed. The oscillograms yield the time-variation of the intensities of the spectral lines or the sections of the continuous spectrum. The device permits the fixing of flares with a duration from 10^{-6} to 1 sec. The other device accomplishes the scanning of the spectrum by means of two channels in the regions of either 4,000-6,500 Å or 6,500-12,000 Å. The recording time of a single spectrum amounts to 2×10^{-3} - 0.1 sec. The number of spectra recorded in time sequence amount to ten. Two slots simultaneously run over the spectrum, also obtained by means of the diffraction grating. The light flux gets into the photomultiplier, and the photocurrent is fed to a double-beam oscillograph, the screen images of which are filmed. The measurements of the temperature of spark discharges in time were carried out by means

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Photoelectric Devices for Recording the Spectra of Luminosity of Momentary Processes

of these devices in various sections of a plasma. Simultaneously, the discharge current was recorded oscillographically. Graphs illustrating the results are added.

Yu.P. Rayzer

Translator's note: This is the full translation of the original Russian abstract.

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Translation from: Referativnyy zhurnal, Khimiya, 1959, Nr 20, p 143 (USSR)

AUTHORS: Gurevich, D.B., Prokof'yev, V.K.

TITLE: The Temperature Distribution in the Plasma of Low-Voltage and High-Voltage Spark Discharge

PERIODICAL: Fiz. sb. L'vovsk. un-t, 1958, Nr 4(9), pp 166 - 170

ABSTRACT: The temperature of low-voltage and high-voltage discharges between Fe-electrodes has been measured by the intensity of lines CuI5106-CuI5153 and NII5045-NII5179 A which have been obtained on a diffraction spectrograph (7A/mm) with 2-channel oscillographic recording. The measurements were carried out for various sections of the torch at time intervals of 10^{-5} sec at a total duration of discharges of $\sim n \cdot 10^{-4}$ sec. The obtained results point to considerable differences in the temperature of various torch zones. In this case the measurement of the temperature by any couple of lines makes it possible to decide not on the average or maximum temperature of the torch, but only on the temperature of the plasma sections at those moments, when the conditions for the excitation of a given couple of lines are mot favorable. The temperature of the

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The Temperature Distribution in the Plasma of Low-Voltage and High-Voltage Spark Discharge

torch of a low-voltage spark for instance, which is measured by the CuI lines is 5,700°K at the beginning of the discharge, whereas the temperature measured by the NII lines is 32,000°K. This difference is connected with the fact that in the measurements of the intensity of the CuI lines mainly colder peripheric zones of the torch take part in the radiation. In the measurement of the "color" temperature of the torch of a low-voltage spark by a continuous spectrum in the region of 4,000 - 6,000 A values have been obtained which are close to the boiling points of the electrode material (for Zn $\sim$1,400°K, for Cu $\sim$2,800°K). This points to the presence of drops of molten metal in the torch with a size of the order of $6 \cdot 10^{-3}$mm ejected from the surface of the electrodes.

B. L'vov

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24(3), 24(7), 24(8) SOV/51-7-1-3/27

AUTHORS: Prokof'yev, V.K., Gurevich, D.B., Belousova, I.M. and Snigirev, Yu.A.

TITLE: On the Problem of the Time Required for Establishment of Thermodynamic Equilibrium in the Plasma of an Arc Discharge (K voprosu o vremeni ustanovleniya termodinamicheskogo ravnovesiya v plazme dugovogo razryada)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 1, pp 14-20 (USSR)

ABSTRACT: The authors measured the time required for establishment of thermodynamic equilibrium in a 5-15 A, 45 V d.c. arc burning between carbon electrodes in air at atmospheric pressure. This time was taken to be equal to the time necessary to establish equilibrium in the arc after application of a short (10-25 μsec) pulse of 80-200 A across the arc gap. The pulses (Fig 2) were produced by discharging a 5 μF, 300 V capacitor or using a circuit consisting of six sections, each with a C = 0.25 μF and L = 10 μH (the pulse generator circuit is shown in Fig 1). Establishment of thermodynamic equilibrium conditions after a pulse was taken to be that moment at which the temperatures T_{exc}, T_{vibr} and T_{rot} became equal; T_{exc} was the temperature deduced from the relative intensities of the atomic lines Fe I 5269.5 and 4325.76 Å, T_{vibr} was the temperature deduced from the ratio of the intensities of unresolved 0—1 and 1—2 CN

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On the Problem of the Time Required for Establishment of Thermodynamic Equilibrium in the Plasma of an Arc Discharge

band edges at 4216.0 and 4197.2 Å, T_{rot} was the temperature deduced from the distribution of intensities in an unresolved 0—1 CN rotational band with an edge at 4216.0 Å. Measurements with a four-channel photoelectric spectrometer SP-64 yielded the values $T_{exc} \cong T_{vibr} \cong T_{rot} \cong 4200°K$ before a pulse was applied; 20-25 μsec after a pulse the three temperatures became equal again at about 6000°K (Figs 3, 4). The authors conclude that this interval of 20-25 μsec is the time required for establishment of thermodynamic equilibrium conditions in the arc described above. There are 4 figures, 6 tables and 11 references, 4 of which are Soviet, 3 English, 3 Dutch and 1 French.

SUBMITTED: July 25, 1958

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

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E032/E514

AUTHORS: Belousova, I.M. and Gurevich, D. B.

TITLE: Distribution of Atoms over Excited States in a Low-Pressure Arc

PERIODICAL: Optika i spektroskopiya, 1961, Vol.10, No.3, pp.410-412

TEXT: The present authors have carried out an experimental check of the applicability of the Boltzmann distribution in the case of some lines of Fe and Ba ions at pressures between 760 and 20 mm Hg. The check was carried out by comparing the "excitation temperature" determined from the relative intensities of these lines. The spectrum was excited in an arc between carbon electrodes and the arc current was kept constant at 5 A. The intensity of the spectral lines was measured with the 4-channel photoelectric spectrometer СП-64 (SP-64) described by D. B. Burevich, V. K. Prokof'yev and Yu. A. Snegirev (Ref.5). The sensitivity of the detectors was checked against a strip lamp with a known brightness temperature. The re-absorption was checked as described by I. B. Podmoshenskiy and L. D. Kondrasheva (Ref.6), using the linear absorption method with the source

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coincident with its image. The figure shows the "excitation temperature" as a function of pressure for different lines of FeI and BaII and also the gas temperature determined from CN bands. (1 - FeI; I_{5167}/I_{5371}, 2 - BaII; I_{4899}/I_{4934}, 3 - FeI; I_{4325}/I_{5371}, 4 - CN, 5 - FeI; I_{5233}/I_{5167}, 6 - FeI; I_{4325}/I_{5167}). As can be seen, all the temperatures agree above p = 100 mm Hg, i.e. all the levels are populated in accordance with the Boltzmann law and the electron temperature coincides with the gas temperature. Below 100 mm Hg the gas temperature decreases and the "excitation temperature" shows a different behaviour, depending on the lines employed in its measurement, i.e. the level population is not describable by the Boltzmann law. As the pressure is reduced, the electron temperature should, in general, increase (A. Engel' and M. Shteyenbek, Ref.7). However, inspection of the figure will show that this is not always the case. In particular, the curves suggest that the levels e^7D_5 and Z^3G^3, which are the upper levels for the transitions responsible for FeI 5233 and 4325.8 Å, are no longer populated according to the Boltzmann law below

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100 mm Hg. The tables gives the data for the lines on which the temperature measurement was based. The values of gf were taken from the paper by King and Aartz (Ref. 8) and $A_i = \sum_k A_{ik}$, i.e. the probability of transition from the given level to all the other possible lower levels was largely based on the results of Crosswhite (Ref.9). The transition to absolute values was carried out in accordance with the procedure described by Allen (Ref.10). The electron concentration was estimated from the intensity ratio of BaI 5535 and BaII 4554 Å at atmospheric pressure and at 100 mm Hg. At 760 mm Hg the concentration was found to be 9×10^{14} cm^{-3}. For pressures just below 100 mm Hg, the criterion for the applicability of the Boltzmann distribution is

$$\frac{N_e p_q}{A_i} > 1 \qquad (1)$$

In this the electron concentration is assumed to be approximately 10^{14} cm^{-3} and the electron temperature $\sim 5500°K$. Knowing the pressure range within which the Boltzmann distribution is no longer obeyed, it is possible to estimate the effective excitation cross-

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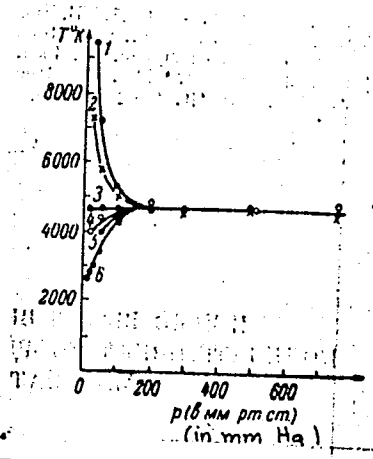
section s_i. The estimated values of s_i are given in the last column of the table. Acknowledgments are expressed to V. K. Prokof'yev for discussing the results. There are 1 figure, 1 table and 10 references: 6 Soviet and 4 non-Soviet.

SUBMITTED: July 20, 1960

Fig.



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30096
S/057/61/031/011/011/019
B125/B102

Ho. 7311

AUTHORS: Belousova, I. M., and Gurevich, D. B.

TITLE: Calculation of temperature of a mercury arc and its experimental verification

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 11, 1961, 1337-1343

TEXT: The authors varified experimentally a procedure suggested by H. Maecker (Zs. f. Phys., 157, 1, 1959) for calculating the temperature in the simplest case of an electric arc in mercury vapor by means of an argon-free mercury arc lamp РД (RD) which was developed by them. Besides, they used a ПРК-4 (PRK-4) standard arc lamp. With the heat conduction function $S(T) = \int_0^T \varkappa(T)dT$ (according to Maecker), the energy-balance equation reads $\sigma E^2 = -\frac{1}{r}\frac{d}{dr}(r\frac{dS}{dr})$, $\varkappa$ - heat conduction coefficient, σ - conductivity. $\sigma(S)$ can be approximated by a straight line, $\sigma^*(S)$: $\sigma^* = 0$ for $0<S<S_1$, and $\sigma^* = B(S - S_1)$ for $S_1<S<S_0$. The arc may thus be divided into an outer non-conducting region and an inner one in which the conductivity is a

X

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30-96

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B125/B102

Calculation of temperature...

linear function of S(T). The zeroth-order Bessel function of $S = S_1 + (S_o - S_1)J_o(x)$, holds for the conducting region and $S = \ln x$ + const for the nonconducting one. The radial part of the function is $S = S_o - 2fS_o(1 - J_o(x))$ for $x = 1.08\varrho e^{1/2zf}$ at $x < 2.405$, and $S = -2fS_o z \ln\varrho$ for $x > 2.405$. Thus, with known temperature dependence of σ and $\varkappa$, it is possible to calculate, by Maecker's procedure, the energy balance, the temperature on the discharge axis, the radial temperature distribution, and the size of the current-conducting region of the arc. From the $\varkappa(T)$-curve it can be seen that the electron component of $\varkappa$ may be neglected at $T < 5500°C$, but is considerable above 5500°C. At 8000°C, $\varkappa_e \simeq 5.5\varkappa_a$, $\varkappa_a$ denoting the atomic component. For known S, the temperature can be calculated from S(T) found by graphic integration of $S = \int_0^T (\varkappa_e + \varkappa_a)dT$. The temperature dependence of σ reads

$$\sigma = \frac{(2\pi)^{3/4}}{\sqrt{3}} \cdot \frac{e^2 m_e^{1/4}}{h^{3/2}} \cdot \frac{(kt)^{3/4}}{\alpha e\sqrt{p}} e^{\frac{-Ei}{2kT}}.$$

The temperature was determined from

Card 2/5

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the absolute intensity of the 5790.66 line. Reabsorption was checked by the method of linear absorption. With known absolute intensity (in watts) of the 5790.66 line the temperature $T = \frac{10.25 \cdot 10^4}{34.0 - \ln I_{abs}}$ is found. The brightness temperature of tungsten was 2723°K for $\lambda = 579$ mμ. The theoretically calculated temperature was somewhat higher than the experimentally determined one; this difference increases with rising power of the arc which may be partly explained by neglecting the radiation losses. Fig. 4 shows the temperature distribution T(r) calculated from $I(r) = -\frac{1}{\pi}\int_{x=r}^{\infty} \frac{I'(x)}{x}\, dz$ with $z^2 = x^2 - r^2$ (2 = experimentally found temperature distribution, 1 = temperature distribution calculated according to Maecker). On the whole, Maecker's procedure gives quite a good estimate of temperature distribution; it is the closer to the real value, the more radiation and convection can be neglected. There are 4 figures, 1 table, and 9 references: 3 Soviet and 6 non-Soviet. The three most recent references to English-language publications read as follows:

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

30096
S/057/61/031/011/011/019
B125/B102

Calculation of temperature...

C. Kenty. J. Appl. Phys., 10, 714, 1939; W. Evenbaas. The High Pressure Mercury Vapour Disch. North-Holland Company, Amsterdam, 1951; C. W. Allen. Astrophysical Quant., London, 1955.

SUBMITTED: December 23, 1960

Legend to the Table: (1) type of lamp, (a) arc; (2) power, w/cm; (3) S_0, erg/cm·sec; (4) $T_{calculated}$; (5) I_{abs}, w/cm; (6) $T_{measured}$.

Тип лампы (1)	$\frac{W}{cm}$, $\frac{вт}{см}$ (2)	f	r, мм	S_0, $\frac{эрг}{см \cdot сек.}$ (3)	$T_{расчетн.}$ (4)	$I_{абс.}$, $\frac{вт}{см}$, $\lambda = 5790$ (5)	$T_{изм.}$, °K (6)
ПРК-4	20.0	0.33	3.5	$4.0 \cdot 10^7$	7600	0.6	6500 ± 100
(a) Дуга РД 700 мм	5.5	0.17	3.0	$2.1 \cdot 10^7$	6200	0.05	5700 ± 200
(a) Дуга РД 100 мм	4.8	0.18	3.2	$1.8 \cdot 10^7$	6000	0.01	5700 ± 200

Card 4/5 Table

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

Calculation of temperature...

30096
S/057/61/031/011/011/019
B125/B102

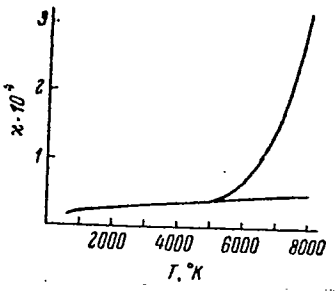

Fig. 2

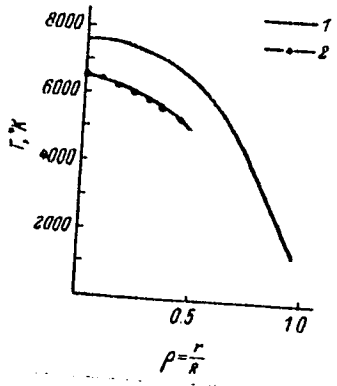

Fig. 4

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

PEYSAKHSON, I.V.; GUREVICH, D.B.

Optical system of a high-intensity spectral instrument for the visible and ultraviolet spectral regions. Izv. AN SSSR. Ser. fiz. 26 no.7:963-964 Jl '62. (MIRA 15:8)
(Spectrograph)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

L 34881-65 EWT(1)/EPA(s)-2/EWT(m)/EPA(up)-2/EPA(w)-2/EEC(s)/T/EWP(t)/EWP(b)/
EWA(m)-2 Pz-6/Po-4/Pab-10/Pt-10/Pi-4 IJP(c) JD/JG/AT S/0051/65/018/002/0190/0197
ACCESSION NR: AP5005032

66
67
B

AUTHOR: Aleksandrov, V. Ya.; Gurevich, D. B.; Podmoshenskiy, I. V.

TITLE: Investigation of the mechanism of excitation and energy exchange from the spectra of nonequilibrium radiation, produced by a pulsed electric field in a thermal plasma. I. Mercury arc

21

SOURCE: Optika i spektroskopiya, v. 18, no. 2, 1965, 190-197

21

TOPIC TAGS: mercury arc, arch discharge plasma, plasma radiation, plasma excitation, plasma temperature

ABSTRACT: This is a continuation of earlier work by two of the authors (Gurevich and Podmoshenskiy, Opt. i spektr., v. 15, 587, 1963), in which a relaxation method was proposed for determining the difference between the excitation temperature and a gas temperature, based on comparison of the cooling time of electrons and heavy particles. It was found that in the positive column of a mercury arc it is impossible to observe the defference between the excitation temperature and the gas temperature at atmospheric pressure, but when an electric field many times stronger then the initial stationary field is produced in the positive column, the temper-

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ACCESSION NR: AP5005032

ature difference becomes observable. The investigations were therefore made using 3--6 keV pulses of short duration (10^{-8} sec), using the set-up shown in Fig. 1 of the Enclosure. By taking oscillographs of the spectral lines it was found that the additional radiation due to the high-voltage pulse has two phases -- nonequilibrium, and equilibrium. The amplitude of the first phase decreases with increasing excitation potential and depends on the multiplicity of the level. A study of the nonequilibrium radiation has shown that in a mercury-arc lamp at atmospheric pressure the transfer of kinetic energy from the electrons to the atoms occurs in the case of inelastic collisions via electronic excitation and stepwise extinction by the atoms, at a low energy difference between levels. It was also found that in the nonequilibrium phase the excitation temperature of sufficiently isolated levels is close to the electron temperature, while that of the higher levels, which have a multiplet structure, is closer to the temperature of the atoms. The ionization temperature is also close to the atom temperature. The luminescence of 14 mercury lines and the radiation of the continuous spectrum was investigated in different wavelength regions. Several factors that influence the performance of the experiment are discussed, such as the occurrence of relaxation, magnetic compression, skin effect, and others. "The authors thank M. I. Demidov, for modifying the DESO-1 oscilloscope to make possible registration of single

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L 34881-65
ACCESSION NR: AP5005032

flashes with time resolution to 10^{-8} sec." Orig. art. has: 2 figures, 3 formulas, and 1 table.

ASSOCIATION: None

SUBMITTED: 20Dec63 ENCL: 01 SUB CODE: ME, EM

NR REF SOV: 003 OTHER: 002

Card 3/4

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ACCESSION NR: AP5005032

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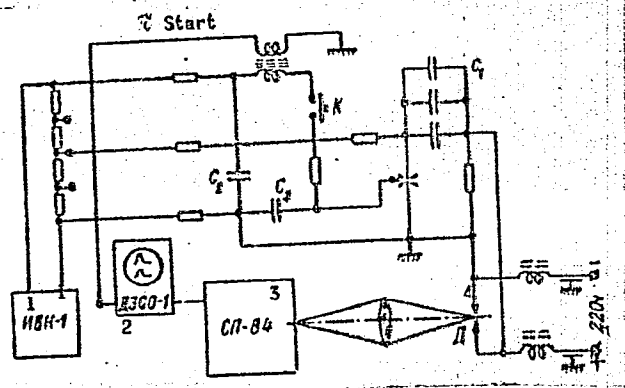

Fig. 1. Diagram of experimental set-up.

1 - Power supply
2 - oscilloscope
3 - multichannel spectrometer
4 - arc

Card 4/4

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.F., kand.tekhn.nauk

Effect of the gap on the hydraulic tightness of plunger pairs. Trakt. i sel'khozmash. 32 no.1:5-8 Ja '62. (MIRA 15:2)

1. Leningradskiy sel'skokhozyaystvennyy institut.
(Tractors--Engines)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.F., kand.tekhn.nauk, dotsent

Role of a gap in an atomizer. Izv.vys.ucheb.zav.; mashinostr. no. 8:181-184 '63. (MIRA 16:11)

1. Leningradskiy sel'skokhozyaystvenny institut.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.F., kand. tekhn. nauk

Geometrical parameters of worn out surfaces. Izv. vys. ucheb. zav.; mashinostr. no.10:58-65 '63. (MIRA 17:3)

1. Leningradskiy sel'skokhozyaystvennyy institut.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D. F.

Gurevich, D. F.

"Investigation of Cha ges, Resulting from Wear, in the Hydraulic Tightness of Plunger Pairs of the Fuel Pump of a Diesel Engine for the DT-54 Tractor." Min Higher Education USSR. Leningrad Agricultural Inst. Leningrad, 1955. (Dissertation for the Degree of Candidate in Technical Sciences.)

Knizhnaya Letopis'; No. 27, 2 July, 1955

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, David Fayvushev, kandidat tekhnicheskikh nauk; ZAKHAROV, A.A., kandidat tekhnicheskikh nauk, retsenzent; LUR'YE, E.S., inzhener, redaktor; POL'SKAYA, R.G., tekhnicheskiy redaktor; SUCHKOVA, O.V., tekhnicheskiy redaktor

[Principles of calculations for pipe fittings] Osnovy rascheta truboprovodnoi armatury. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 279 p. (MLRA 9:12)
(Pipe fittings)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.F., kand.tekhn.nauk

Theory of the hydraulic density of plunger pairs. Avt.i trakt.prom. no.7:13-19 Jl '57. (MIRA 10:11)

1. Leningradskiy sel'skokhozyaystvennyy institut.
(Automobiles--Engines) (Hydraulics)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

SOV/113-58-2-6/15

AUTHOR: Gurevich, D.F., Candidate of Technical Sciences

TITLE: Foundations of a Theory for the Wear of Plunger Couples (Osnovy teorii iznosa plunzhernykh par)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 2, pp 20 - 24 (USSR)

ABSTRACT: Most plunger couples operating at less than 1,500 rpm become unserviceable due to the increase of clearance between the plunger and the bush. The conditions of general wear are studied in order to obtain a theoretical basis for calculating the wear. The wear is determined by the content of solid admixtures in the fuel, the speed of the fuel movement in the clearance, etc. The wear of the plunger and the bush is calculated separately. The different values are calculated for 8 positions of the plunger and tables and graphs have been compiled (Figure 4). The corresponding table and graph for the bush is shown in Figure 5. The cited facts

Card 1/2

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

SOV/113-58-2-6/15

Foundations of a Theory for the Wear of Plunger Couples

permit the determination of the geometry of the plunger and the bush appearing during wear and its influence on operating conditions. There are 5 sets of diagrams.

ASSOCIATION: Leningradskiy sel'skokhozyaystvennyy institut (Leningrad Agricultural Institute)

1. Automobile industry 2. Internal combustion engines---Equipment
3. Pistons---Performance 4. Abrasion---Theory

Card 2/2

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

SOV-113-58-10-8/16

AUTHORS: Gurevich, D.F., Candidate of Technical Sciences

TITLE: On the Theory of the Wear of Plunger Pairs (K teorii iznosa plunzhernykh par)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 10, p 26 - 29 (USSR)

ABSTRACT: The article deals with the theory of the wear of plunger pairs and is based on a preceding article published in Avtomobil'naya promyshlennost', Nr 2, 1958, by the same author. The present article contains formula for calculating the wear of plunger pairs as influenced by different factors, speed and operational pressure of the plunger, contents of abrasive particles, etc. There are two diagrams and 2 Soviet references.

ASSOCIATION: Leningradskiy sel'skokhozyaystvennyy institut (Leningrad Agricultural Institut)

1. Pistons--Mechanical properties 2. Mathematics--Applications

Card 1/1

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.F., kand.tekhn.nauk

Hydraulic testing of plunger pairs and recording the movement of the plunger. Trakt.i sel'khozmash. no.10:11-13 O '59. (MIRA 13:2)

1. Leningradskiy sel'skokhozyaystvennyy institut.
(Fuel pumps--Testing)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, David Fayvushev, kand. tekhn. nauk; DANAILOVA, B.I., inzh., retsenzent; YURKEVICH, M.P., inzh., red.; ONISHCHENKO, P.N., red. izd-va; POL'SKAYA, R.G., tekhn. red.

[Fundamentals of the design of pipe fittings] Osnovy rascheta truboprovodnoi armatury. 2. izd., ispr. i dop. Moskva, Mashgiz, 1962. 409 p. (MIRA 15:6)

(Pipe fittings)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.F., kand. tekhn. nauk, dotsent

Design of efficient plunger pairs. Energomashinostroenie 10 no.7:34-38 Jl '64. (MIRA 17:9)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.F., kand. tekhn. nauk

Hydraulic density of cylindrical couplings with minor gaps. Vest. mashinostr. 44 no.10:31-37 O '64. (MIRA 17:11)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.F., kand. tekhn. nauk; SHELUKHIN, A.S., inzh., retsenzent

[Design and construction of pipe fittings] Raschet i konstruirovanie truboprovodnoi armatury. Izd.3., perer. i dop. Moskva, Mashinostroenie, 1964. 831 p. (MIRA 18:6)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.G.

Mbr., Ural Factory im. S. M. Kirov, -c1948-. Electrical Engineering.

"Rationalization of Technological Processes and Performance of High-Frequency Electric Current Heat Treatment of Tractor Parts," Prom. Energet., No. 7, 1948.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.I.

BUA-2 automotive drilling unit. Biul.tekh.-ekon.inform.Gos. nauch.-issl.inst.nauch.i tekh.inform. no.2:14-15 '63. (MIRA 16:2)

(Boring machinery)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D. M.
USSR/Natural Science

Card 1/1

Author : Gurevich, D. M. Cand. of Historical Sciences

Title : Book about the first Russian Natural Sciences Museum

Periodical : Priroda, 5, 124 - 125, May 1954

Abstract : Review of the book by T. V. Stanyukovich entitled "The Chamber of Art of the Petersburg Academy of Sciences" published by the Academy of Sciences USSR. The Chamber of Art of the Petersburg AS was the first known Russian Museum of Natural Science Exponents. It was organized at the beginning of the 18th century and collected exponents from various countries (Russia, China, India, Japan, Tibet, North America, Brasil and Oceania). The museum possesses exponents on anatomy, flora, fauna, mineralogy, geography, physics, astronomy etc. Names of personalities who contributed to the collection of the museum are given.

Institution : ....

Submitted : ....

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D. M.

USSR/Physics - Steel, Pearlite transformation FD-904

Card 1/1 Pub 153-13/26

Author : Gurevich, D. M.

Title : Problem of the temperature of the initial transition of pearlite into austenite during high-speed annealing

Periodical : Zhur. tekh. fiz. 24, 1268-1272, Jul 1954

Abstract : The temperature of the transition point of pearlite into austenite does not change during variation of heating speed from 10 to 700 degrees/sec. The presence and magnitude of welded hemispheres affect the reading of thermocouples. Therefore the specimens should be tested after the thermocouples have been welded. Indebted to V. D. Sadovskiy, G. F. Golovin, K. I. Tushinskaya, N. A. Garbuz and L. G. Kharitonov. Seventeen references. Tables; graphs

Institution : --

Submitted : July 30, 1953

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GURVICH, D. M.

USSR/Scientists - Natural sciences

Card 1/1 : Pub. 86 - 9/38

Authors : Gurvich, D. M.

Title : An outstanding research worker of our country

Periodical : Priroda 43/12, 67-70, Dec 1954

Abstract : In commemoration of the passing of 200 years since the birth of V. F. Zuev (1754-1794), the author presents an account of the life and work of this early Russian scientist. His work largely consisted of expeditions for the study of flora and fauna and the knowledge gained was incorporated into several books.

Institution : .....

Submitted : .....

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.M.; KOGAN, V.A.; RATINER, M.M.

Program controlled four-spindle drilling machine. Biul.tekh.-ekon. inform.Gos.nauch.-issl.inst.nauch.i tekh.inform 17 no.11:45-46 N '64. (MIRA 18:3)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D. G.

1(2)(3)(4);26(1) P.3 PHASE I BOOK EXPLOITATION SOV/3376

Silovyye ustanovki vertoletov; sbornik statey (Helicopter Power Units; collection of articles) Moscow, Oborongiz, 1959. 184 p. Errata slip inserted. 2,400 copies printed.

Ed.: M. M. Maslennikov, Professor; Managing Ed.: A. S. Zaymovskaya; Ed. of Publishing House: I. A. Suvorova; Tech. Ed.: V. P. Rozhin.

PURPOSE: This book is intended for specialists who design, manufacture and operate helicopters, and may also be used by instructors and students of schools of higher technical education.

COVERAGE: This book contains 7 articles which discuss problems connected with the application of gas turbines for driving helicopter rotors and with jet driven rotors. The author is particularly concerned with increasing the power, economy, useful load, and flight distance of helicopters. There are references, both Soviet and non-Soviet, in footnotes throughout the book.

Card 1/4

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

TABLE OF CONTENTS:

1. Mikerov, A. V. Comparative Evaluation of One-shaft and Two-shaft Turboprop Engines for Helicopter Power Plants. 5
The author finds the efficiency of a two-shaft turboprop engine slightly higher than the efficiency of a similar one shaft engine. The one-shaft engine, however, has higher acceleration.

2. Shal'man, Yu. I. Investigation of Rotation Losses in Gas Turbines. 18
Rotation losses are defined as losses due to the aerodynamic drag of turbine blades when the turbine is rotated by external forces. They depend on the twist of the airfoil of the turbine blade, but do not depend on the profile of the airfoil.

3. Savostin, A. F. Possibility of Using a Free Gas Turbine for the Direct Drive of the Helicopter's Rotor 48

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

Helicopter Power Units (Cont.) SOV/3376

The use of low-speed turbines for the direct drive of rotor blades is possible, but results in a lower efficiency coefficient.

4. ~~Gurevich, D. U.~~ Experimental Investigation of Diffusor Exhaust Conduits in Turboprop Helicopters 59
The author gives methods of determining hydraulic characteristics of exhaust conduits of turboprop engines, describes their elements, and gives data on their hydraulic resistance and their installation. Some data are also given on the use of the kinetic energy of turboprop engine exhaust gases and on the prospect of future development.

5. Khasileva, D. P. Method of Analysis of Characteristics of Free Turbine Turbo-prop Engines for Helicopters. 114
The analysis described differs from other methods in the consideration of exhaust conduit characteristics and in more precise evaluation of the influence of turbine rotation on

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engine characteristics. The method is comparatively simple.

6. Bekhli, Yu. G. and I. I. Mashkevich. Evaluation of the Possibility of Using Exhaust Gases in the Compressor Reactive Drive of Helicopter Rotor Blades (Gas-air mixture system) 147
This article is based on French and English experiments in 1952 and 1955 on the use of turbine gases to drive helicopter rotor blades. (Doran's DH-011 and Napier's Oryx Gas Generator)

7. Kaganovich, B. P. Some Problems of Helicopter Rotor Blades Driven by Turbojet Engines 167
The author describes the operating conditions of turbojet engines mounted on helicopter rotor blades and suggests some solutions of basic technical problems connected with this propulsion method.

AVAILABLE: Library of Congress (TL716.M4)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D. V. PA 165T75

USSR/Physics - Luminescence 1 Mar 50
Conductivity, Photo-

"Luminescence and Photoconductivity of Cadmium Sulfide," D. V. Gurevich, N. A. Tolstoy, P. P. Feofilov

"Dok Ak Nauk SSSR" Vol LXXI, No 1, pp 29-32

Investigated kinetics of luminescence and photoconductivity, carried out by method of "taumeter" (tau--life span or duration) on CdS monocrystals. Mathematically discusses phosphorescence relaxation and so-called "nonlinear" photoconductivity. Taumeter was described in ZhETF 19, 421, 1949, and "Iz Ak Nauk SSSR, Ser Fiz," 13, 211, 1949, by Tolstoy et al. Submitted 3 Jan 50 by Acad S. I. Vavilov.

[redacted] 165T75

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.Ya.

[Collection of problems and exercises in iron rolling] Sbornik zadach i uprazhnenii po prokatke. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953. 123 p. (MLRA 7:3)

(Rolling (Metalwork))

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, David Yakovlevich; SHAPIRO, B.S., inzhener, retsenzent; PADOSOV, N.M., redaktor; BERNSHTEYN, M.L., redaktor; MIKHAYLOVA, V.V., tekhnicheskiy redaktor

[Concise manual for rolling mill operators] Kratkii spravochnik prokatchika. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1955. 415 p. (MLRA 8:10)
(Rolling mills)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, David Yakovlevich; SLAVKIN, V.S., redaktor; GOLYATKINA, A.G., redaktor izdatel'stva; PETROVA, N.S., tekhnicheskiy redaktor

[Principles of rolling] Osnovy prokatnogo proizvodstva. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 254 p.
(Rolling mills) (MLRA 10:1)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.Ya., referent.

Relation between varying factors and the precision in the hot rolling of sheet and strip metal. (from "Neue Hütte," no.5, 1956). Stal' 16 no.11:1048-1051 N '56.
(Rolling (Metalwork)) (MLRA 10:1)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D. Ya. (Engr.)

"The Electronic Integrator used for Measuring the Potentials in Corrosion Investigations in Leningrad."

report presented at the Odessa Conference on the Fighting of Corrosion Caused by Stray Currents, Nov 1957. Odessa Branch NTOEP (Elektrichestvo, '58, 4:83)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.Ya., referent

Simplified nomogram for determining the radius of the deformed part of the roll during cold rolling of the strip and sheet. Stal' 18 no. 7:635-638 Jl '58. (MIRA 11:7)

(Rolls(Iron mills))

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SOV/133-59-10-27/39

AUTHOR: Gurevich, D. Ya.

TITLE: Determination of Pressure on the Rolls and Supporting Rod in Tube-Rolling Mills

PERIODICAL: Stal', 1959, Nr 10, pp 933-934 (USSR)

ABSTRACT: Review of a German experiment described in Neue Huette, 1958, Nr 12, pp 758-762. There are 6 figures; 1 table; and 1 German reference.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

KOGOS, Ayzik Markovich; GUREVICH, D.Ya., inzh., retsenzent

[Mechanical equipment of wire drawing and strip rolling mills] Mekhanicheskoe oborudovanie volochil'nykh i lentoprokatnykh tsekhov. Izd.2. Moskva, Izd-vo "Metallurgiia," 1964. 391 p. (MIRA 17:6)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.Ye., inzh.; EYDINOV, Yu.S., inzh., red.

[Conveyer method of finishing buildings; practices of the No.1 Moscow Finishing Administration of the Main Administration for Construction in Moscow] Konveiernyi metod otdelki zdanii; opyt tresta "Mosotdelstroi" no.1 Glavmosstroia. Moskva, Gosstroiizdat, 1962. 27 p. (MIRA 17:4)

1. Akademiya stroitel'stva i arkhitektury SSSR. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Nachal'nik tekhnicheskogo otdela tresta "Mosgorstroy" (for Gurevich).

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

VARNAKOVA, Ye.D.; GUREVICH, D.Ye.; ZHUKOV, M.M.; RYAZANTSEVA, L.I., red. izd-va; MOCHALINA, Z.S., tekhn. red.

[Organization of the dissemination of information and introduction of new technology and advanced practices in construction] Organizatsiia informatsii, propagandy i vnedreniia novoi tekhniki i peredovogo opyta v stroitel'stve; opyt Orgstroev. Moskva, Gosstroiizdat, 1962. 109 p. (MIRA 15:7)

(Building--Technological innovations)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.Ye.

Increase the rate of technical progress in harbor construction. Gidrotekhnika no.1:88-90 '61. (MIRA 15:3)
(Harbors)(Hydraulic engineering)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.Ye.; SHEKHTERMAN, A.S.

Improving the methods for stressing reinforcements. Gidrotekhnika no.1:100-102 '61. (MIRA 15:3)

(Concrete reinforcements)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.Ye., inzh.; VOLIK, A.G., inzh.

Raise the level of prefabrication of hydraulic structures in open roadsteads. Transp. stroi. 12 no.2:26-27 F '62. (MIRA 15:7)
(Hydraulic structures) (Precast concrete construction)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.Ye.; NIKEROV, P.S., dotsent

Hydraulic wave damper. Transp. stroi. 12 no.4:27-29 Ap '62. (MIRA 15:5)

1. Glavnyy tekhnolog Chernomorgidrostroya (for Gurevich).
2. Odesskiy institut inzhenerov morskogo flota (for Nikerov).
(Waves, Calming of) (Hydraulic machinery)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.Ye., inzh.; VOLIK, A.G., inzh

Rear protecting of wharves made of large concrete blocks without a prism of stone. Transp.stroi. 12 no.7:28 Jl '62. (MIRA 16:2)

(Wharves) (Precast concrete)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, David Yefimovich, inzh.; SASIN, Arkadiy Vikent'yevich, inzh.; SHNEYDER, Ye.B., red.

[I.V.Diukarev's unified integrated crew for the construction of completely prefabricated apartment houses; Moscow Building Trust No.18 of the Main Building Administration of Moscow] Ob"edinennaia kompleksnaia brigada I.V.Diukareva na stroitel'stve polnosbornykh zhilykh domov; trest "Mosstroi" no.18 Glavmosstroia. Moskva, Gosstroiizdat, 1963. 22 p. (MIRA 17:9)

1. Akademiya stroitel'stva i arkhitektury SSSR. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Nachal'nik tekhnicheskogo otdela tresta "Mosgorgstroy" (for Gurevich). 3. Nachal'nik otdela Moskovskogo gosudarstvennogo stroitel'no-montazhnogo tresta no.18 Glavnogo otdeleniya po zhilishchnomu i grazhdanskomu stroitel'stvu v gorode Moskve (for Sasin).

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.Ye.; VOLIK, A.G.

Construction of pier-type moorings. Transp. stroi. 13 no.2:23-27 F '63. (MIRA 16:3)

1. Glavnyy tekhnolog Chernomorgidrostroya (for Gurevich).
2. Nachal'nik tekhnicheskogo otdela Chernomorgidrostroya (for Volik).

(Precast concrete construction)
(Piers)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D. Ye.; VOLIK, A. G.

Working rock under water. Transp. stroi. 13 no.4:24-25 Ap '63. (MIRA 16:4)

1. Glavnyy tekhnolog tresta Chernomorgidrostroy (for Gurevich).
2. Nachal'nik tekhnicheskogo otdela tresta Chernomorgidrostroy (for Volik).

(Hydraulic engineering)
(Boring) (Blasting, Submarine)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, D.Ye., inzh.; VOLIK, A.G., inzh.

Asphalt and concrete mattresses for strengthening the underwater slopes of rivers and reservoirs. Transp.stroi. 14 no.12:19-22 D '64. (MIRA 19:1)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

VOLIK, A.G., inzh.; GUREVICH, D.Ye., inzh.; LAVRINOVICH, Ye.V., kand. tekhn. nauk; SAVINOV, O.A., doktor tekhn. nauk

Glue concrete joints of pipe piles. Transp. stroi. 15 no.5:49-51 My '65. (MIRA 18:7)

1. Chernomorgidrostroy (for Volik, Gurevich). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhnicheskikh i sanitarno-tekhnicheskikh rabot (for Lavrinovich, Savinov).

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

VEYNBERG, B., kandidat tekhnicheskikh nauk; GUREVICH, E., inzhener.

Choice of main parameters for non-crosshead compressors. Khol.tekh. 30 no.2:7-14 Ap-Je '53. (MLRA 6:7)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche imeni Baumana. 2. Tsentral'noye konstruktorskoye biyuro kholodil'nogo mashinostroyeniya.
(Compressors)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, E.

Improve the quality of plastic wares. Sov.torg. no.1:30-32 Ja '59. (MIRA 12:2)

(Plastics industry)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, E.A.

18

The utilization of sylvinite waste products obtained in the Solikamsk potassium plants. E. A. Gurevich and V. F. Asmus. *Byull. Tsentral. Nauch.-Issledoval. Solyanoi Lab.* 1939, No. 7, 1-28; *Khim. Referat. Zhur.* 1940, No. 8, 86.—G. and A. discuss the possibility of utilizing the sylvinite waste products as a base for organizing the production of salt in the Ural mountains, production of tech. salt by mech. washing of sylvinite waste products and of table salt by the flotation method, with an annual output of 50,000 and 300,000 tons, resp. Best results from flotation are obtained if oleic acid, peat tar and green soap are used as flotation reagents. The product obtained after the 2nd flotation contained NaCl 98.5-99.7, KCl 0.04-0.12 and insol. 0.05-0.3%. A quant. scheme for the production of common salt by the flotation method and the principal tech.-economic criteria of this method are given. W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

YEVSTROP'YEV, Konstantin Sergeyevich, professor, doktor khimicheskikh nauk; TOROPOV, Nikita Aleksandrovich, professor, doktor tekhnicheskikh nauk; GUREVICH, E.A., redaktor; GLADKIKH, N.N., tekhnicheskiy redaktor

[The chemistry of silicon and the physical chemistry of silicates] Khimiia kremniia i fizicheskaia khimiia silikatov. Izd. 2- oe. Moskva, Gos. izd-vo lit-ry po stroit. materialam, 1956. 339 p. (MLRA 10:3)
(Silicon) (Silicates)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

VOLKOV, Valentin Georgiyevich, inzh.; YELSHIN, Igor' Mikhaylovich, kand. tekhn. nauk; KHARIN, Arnol'd Ivanovich, kand. tekhn. nauk; KHRUSTALEV, Mikhail Ivanovich, kand. tekhn. nauk; GUREVICH, E.A., red.

[Enriching and fractionating natural sand for concrete by the hydraulic method] Obogashchenie i fraktsionirovanie prirodnykh peskov dlia betona gidravlicheskim sposobom. Moskva, Stroiizdat, 1964. 162 p. (MIRA 18:1)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, E.B. [Hurevych, E.B.], student geol.-geograf.fakul'teta;
LANDA I.M., nauchnyy rukovoditel', dots.

Peresyp during the forty years of Soviet rule. Pratsi Od.un.
Zbir.stud.rob. 149 no.5:137-140 '59. (MIRA 13:4)

1. Odesskiy gosudarstvennyy universitet.
(Odessa--Economic conditions)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

BOGDANOV, N.I., inzh.; GUREVICH, E.I., inzh.; KARUNA, Ye.V., inzh.

Use of cranes in the assembly of structural elements.
Mekh. stroi. 19 no.10:3-5 O '62. (MIRA 15:12)
(Cranes, derricks, etc.)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, E.I., inzh.; LITVINOV, M.V., inzh.

Parameters of mechanisms for assembling structural elements can be improved. Prom. stroi. 41 no.11:30-32 N '63. (MIRA 17:2)

1. Dnepropetrovskiy otdel Gosudarstvennogo proyektnogo instituta Ukrproyektstal'konstruktsiya.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH

GUVERICH, E.I., inzh.; FILIPPOV, I.F., inzh.; KHUTORETSKIY, G.M., inzh.

Analysis of temperature distribution in turbogenerator rotors with multijet cooling systems. Vest. elektroprom 34 no.6:5-8 Je '63. (MIRA 16:7)

(Turbogenerators)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, E.I.; FILIPPOV, I.F.

Measurement of the steady temperature of a gas current. Elektrosila no.22:37-41 '63. (MIRA 17:1)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, E.I., inzh.; FILIPPOV, I.F., inzh.

Device for measuring gas velocity in the channels of electrical machines. Elektrotekhnika 36 no.8:58-60 Ag '64. (MIRA 17:9)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

GUREVICH, E.I., inzh.; KONOVALOVA, K.N., inzh.; MYSHENKOVA, N.K., inzh.; SENCHUGOV, K.I., inzh.; SIMO, I.N., inzh.

Study of the TVF-100-2 trubogenerators manufactured by the "Elektrosila" factory. Elek. sta. 35 no.12:25-28 D '64. (MIRA 18:2)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

TARNOPOL'SKIY, A.A., inzh.; SHKLOVSKIY, Ye.I., inzh.; TYGLENEV, S.D., inzh.; GUREVICH, E.I., inzh.; RABINOVICH, S.Yu., inzh.; DRYAPACHENKO, B.G., inzh.; SMORODA, I.M., inzh.

Investigation of deformations in the jacket of blast furnaces during their erection by protrusion. Prom. stroi. 42 no. 6: 9-12 '65. (MIRA 18:12)

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L 18869-63 EWP(j)/EPF(c)/EWT(m)/BDS ESD-3 Pc-4/Pr-4 RM/WW/RH/MAY

ACCESSION NR: AP3006623 S/0076/63/037/009/2048/2053 69 68

AUTHORS: Izmaylov, N. A. (Deceased); Gurevich, E. L.

TITLE: Investigation of equilibria in non-aqueous electrolyte solutions by absorption spectra methods. 4. Optical and electrical studies of picric acid in hexane-n-butanol and dioxane-water mixtures.

SOURCE: Zh. fizicheskoy khimii, v. 37, no. 9, 1963, 2048-2053

TOPIC TAGS: absorption spectrum picric acid, dioxane water mixture, association constant, dissociation constant, hexane-n-butanol mixture

ABSTRACT: The absorption spectra of picric acid and its salts were investigated at various concentrations in 97% a dioxane-water mixture and in 25 and 40% n-butanol mixtures. The spectral absorption method used in this investigation was described by the authors in a previous investigation. The constants of transformation K_{tr} of the picric acid have been calculated at a concentration of 1×10^{-3} mole per liter. It was shown that glass electrode can be used to evaluate the hydrogen ion activity in the above solvents. The ordinary constants (K_{or}) of

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

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ACCESSION NR: AP3006623

picric acid were determined from the emf of a circuit using two glass electrodes with solutions of constant ion strength and hydrochloric acid as reference. The dissociation constants and the association constants of picric acid were calculated. After comparing the values for the constants, it was concluded that picric acid solutions are almost completely in the undissociated state in the form of ion associations or undissociated molecules with very low free ion concentration. Orig. art. has: 2 tables, 4 figures and 1 formula

ASSOCIATION: Kharkovskiy gosudarstvenny*y universitet (Kharkov state university)

SUBMITTED: 14Sep62 DATE ACQ: 30Sep63 ENCL: 00

SUB CODE: CH, PH NO REF SOV: 009 OTHER: 003

Card 2/2

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

IZMAYLOV, N.A.; GUREVICH, E.L.

Study of equilibria in nonaqueous solutions of electrolytes by means of absorption spectra. Part 1: Picric acid and sodium picrate in water, ethyl alcohol, and normal butyl alcohol. Opt. i spektr. 10 no. 1:19-26 Ja '61. (MIRA 14:1)
(Picric acid) (Chemical equilibrium)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617410017-4

IZMAYLOV, N.A.; GUREVICH, E.L.

Studying the equilibria in nonaqueous solutions of electrolytes using absorption spectra. Part 2. Picric acid and sodium picrate in acetic acid, pyridine, acetonitrile and acetone. Opt. i spektr. 10 no.6:767-772 Je '61. (MIRA 14:8)
(Electrolytes) (Absorption spectra)

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