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34233

S/181/62/004/00[illegible]/[illegible]
B102/B138

Electrical and photoelectrical

$\sigma \sim \sigma_0 e^{\alpha(E-E_0)}$ From the dark-current rise observed with [illegible] the mean activation energy $\Delta E_d$ = [illegible] ev was calculated. [illegible] was found to decrease with increasing $\lambda$, almost vanishing at $\lambda$ [illegible]. The optical activation energy was $\Delta E_0$ = 1.76 ev. All the specimens prepared had a high photosensitivity between [illegible] and 7[illegible] mμ. [illegible] illumination, the multiplicity factor of the resulting [illegible] reached 400-500. The illumination dependence of the photocurrent [illegible] described by a law of the type $I_{ph} \sim E^n$, n and r being constants. The [illegible] ampere characteristics were dependent on direction and polarity. [illegible] longitudinal measurements, n = [illegible] - 0.9 in transverse, [illegible] when the illuminated electrode was positive, and n = 0.7 - [illegible] when [illegible] negative. For E < [illegible] lux, n was equal to 0.9 - 1.0 in all cases. The measurements were carried out with Ir and Au electrodes. The optical and photoelectrical properties of these layers were not dependent [illegible] treatment up to 100°C nor on the prolonged (up to 2 years) [illegible] storage. The authors discovered that as-dep layers were [illegible] [illegible]

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

34233
S/181/62/004/002/016/[illegible]
B102/B138

Electrical and photoelectrical [illegible]

preserved this state for a long time. This polarization was [illegible] in darkness than in light. The polarization [illegible] [illegible] was estimated to be 1 - [illegible] coul/cm [illegible] [illegible] thanked for help. There are [illegible] figures and [illegible] references [illegible] [illegible] [illegible]. The three references [illegible] [illegible] read as follows: H. Kallman, B. Rosenberg, Phys. Rev. [illegible], [illegible] [illegible]; H. Kallman, J. Rennert, Electronics, 32, [illegible]; M. [illegible] [illegible] J. Phys. Soc. Jap., 14, [illegible], [illegible].

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN USSR, Leningrad (Physicotechnical Institute [illegible] A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: August 17, [illegible]

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

39961
S/181/62/004/008/004/041
B125/B104

AUTHORS: Lyubin, V. M., and Fedorova, G. A.

TITLE: High-voltage photoelectromotive forces in layers of antimony triselenide

PERIODICAL: Fizika tverdogo tela, v. 4, no. 8, 1962, 2026-2030

TEXT: The spectral distribution of the photoeffect, its lag and its dependence on light intensity were measured with the same instruments that had been used by B. T. Kolomiyets and V. M. Lyubin (FTT, 1, 746, 1959). Antimony and selenium were fused to $Sb_2Se_3$ in vacuo and condensed on glass or mica plates with platinum or aquadag electrodes. The photovoltage was measured with a tube electrometer of type ЭМ-5 (EM-5) or with electrostatic voltmeters of type С-95 (S-95). The photo-emf depends on the temperature t of the backing during condensation and also on the angle θ of incidence of the molecular beam, and reaches its highest value at θ = 25-45° and t ≈ 300°C. A strong photo-emf can arise only in crystalline samples, and a weak one only in amorphous samples. The photo-emf, which does not arise near an electrode, increases in proportion

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to the electrode spacing. The photo-emf produced by frontal illumination with white light may have different signs even if the illuminated samples are produced under equal conditions. The volt-ampere characteristics recorded in light and in the dark are linear up to electric field strengths of $10^4$ v/cm. Both the rise and the decay times of the photo-emf are $10^{-4}$ sec at most and have no long-time components. The photo-emf of many samples rises very steeply at first. The photocurrent increases in proportion to the light intensity; the photo-emf, however, tends to saturation, and its sign very often changes when white light is incident through the glass backing. The holes are the predominant carriers. Considerable photovoltage (20-30 v/cm) also occurs in $Sb_2S_3$, $Sb_2S_3 \cdot Sb_2S_3$ (p-type semiconductors), $Sb_2S_3 \cdot Bi_2S_3$, and 2 $Sb_2S_3 \cdot Bi_2S_3$ (n-type semiconductors). In the case of frontal illumination, the spectral properties of the photovoltage of high-efficient and low-efficient layers are almost the same (Fig. 4). There are 6 figures.

SUBMITTED: February 15, 1962



APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBIN, V.M.; FEDOROVA, G.A.

High-voltage photo-e.m.f. in antimony triselenide.
Fiz. tver. tela 4 no.8:2026-2030 Ag '62. (MIRA 15:11)
(Antimony selenide--Electric properties)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBIN, V.M.; FOMINA, V.I.

Photoelectret and cathodoelectret state in $Tl_2Se.As_2Se_3$ layers. Fiz. tver. tela 5 no.12:3367-3372 D '63. (MIRA 17:2)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

L 20283-65 EWT(m)/EWP(t)/EWP(b) IJP(c)/SSD/AFWL/ASD(a)-5/ESD(dp)/ESD(t)
RDW/JD

ACCESSION NR: AP5000693 S/0181/64/006/012/3740/3742

AUTHOR: Lyubin, V. M.; Maydzinskiy, V. S.

TITLE: Contact effects and carrier mobility in amorphous films of antimony triselenide

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3740-3742

TOPIC TAGS: carrier density, carrier mobility, antimony triselenide, thin film

ABSTRACT: The results are reported of a study of contact effects in amorphous $Sb_2Se_3$ films prepared by evaporation in vacuum. The film thickness was 0.2--10.0 $\mu$. The study was carried out mainly by investigating the capacitance C of the samples in the frequency range 20--$10^6$ cps. The permittivity $\epsilon_k$ was calculated from the values of C. For thin samples ($d < 0.8\ \mu$), it was found that $\epsilon_k = 4$--8, but the permittivity of thick samples was anomalously high. These films consisted of two layers: a thin high-resistivity and a thick low-resistivity layer. In thin films, the high-resistivity layer occupied the major part of the film and the values of $\epsilon_k$ could be taken as the true permittivity of $Sb_2Se_3$. The high-resistivity layer was due to carrier depletion in the contact

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L 20283-65
ACCESSION NR: AP5000693

regions of the semiconductor. The values of the depleted layer thickness, calculated on the assumption that $\varepsilon = 6$, ranged from 0.2 to 0.8 $\mu$. The total density $N_t$ of free ($n_o$) and trapped ($n_t$) carriers was estimated from $d_d = (\varepsilon/4\pi e N_t)^{1/2}$; the values of $N_t$ ranged from $5.4 \times 10^{14}$ to $1.2 \times 10^{16}$ $cm^{-3}$. Substituting $N_t$ and $\sigma \approx 3 \times 10^{-8}$ $ohm^{-1} \cdot cm^{-1}$ into the conductivity formula the "effective" mobility (with allowance for trapping) was found to be $\mu \approx 10^{-4}$ $cm^2 \cdot V^{-1} \cdot sec^{-1}$. These values of the carrier density and mobility indicate the order of magnitude for amorphous chalcogenide materials and are close to the values for films of organic dyes and of amorphous tellurium. "The authors thank B. T. Kolomiyets and A. R. Regel' for discussing the problems dealt with in the present note." Orig. art. has: 2 figures and 1 formula.

ASSOCIATION: None

SUBMITTED: 14Apr64 ENCL: 00

SUB CODE: SS NR REF SOV: 006 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBIN, V.M.; MAYDZINSKIY, V.S.

Contact phenomena and current carrier mobility in amorphous layers of antimony triselenide. Fiz. tver. tela 6 no.12: 3740-3742 D '64 (MIRA 18:2)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

JD/AT

ACCESSION NR: AP5017061 UR/0289/65/000/001/0124/0125 33
535.215.4:621.315.592:537.531 32
AUTHOR: Tsukerman, V. G.; Lyubin, V. M.; Staryy, I. B.; Vaynshteyn, E. Ye. 8

TITLE: Photosensitivity of certain semiconducting films in the X-ray region of the spectrum

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 1, 1965, 124-125

TOPIC TAGS: cadmium sulfide, tellurium sulfide, arsenic selenide, thallium arsenic selenide, semiconducting film, photosensitive film

ABSTRACT: Semiconducting films of CdSe, CdTe (crystalline structure) and $Sb_2Se_3$, $As_2Se_3$, $Tl_2Se.As_2Se_3$ (amorphous structure), 1-5 microns thick, were investigated. Photosensitivity to X-rays was measured chiefly across the film, and the intensity of the

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x irradiation was varied. The specific dark resistance of the materials $r_d$ and their sensitivity

$$\alpha = \frac{I_g}{I_d}$$

(where $I_g$ is the stationary value of the photocurrent for the given illumination intensity

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

L 15350-66 EWT(1)/EWT(m)/ETC(f)/EWG(m)/T/EWP(t)/EWP(b) LJP(c) RDW/JD/AT
ACC NR: AP5028147 SOURCE CODE: UR/0077/65/010/006/0451/0452

AUTHOR: Lyubin, V. M.; Tsukerman, V. G.

ORG: Institute of Inorganic Chemistry, Siberian Department, AN SSSR (Institut neorganicheskoy khimii Sibirskoye otdeleniye AN SSSR)

57
B

TITLE: Sensitivity of $Tl_2Se \cdot As_2Se$ photoelectret layers in the x-ray region of the spectrum

21, 44, 55

SOURCE: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, v. 10, no. 6, 1965, 451-452

TOPIC TAGS: selenium, tellurium, photoelectret, x ray spectrum, photoconductivity

ABSTRACT: Samples of $Tl_2Se \cdot As_2Se$ were polarized by x-rays and depolarized by visible light. Radiation intensity was regulated by changing the anode current of the x-ray tube, keeping the voltage constant. Typical polarization characteristics for x-ray radiation are graphed. The interval between the end of polarization and the beginning of depolarization was 30 sec. Polarization voltage was kept constant and was equal to 3v. It was found that an increase in polarization time (for both po-

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ACC NR: AP5028147

larization methods) leads to polarization saturation. Spectral characteristics of the photoconductivity of $Tl_2Se \cdot As_2Se_3$ samples in the x-ray part of the spectrum are given. The authors conclude that $Tl_2Se \cdot As_2Se_3$ and other materials of the Se--As-Tl system can be used in photoelectrets for producing visible x-ray images. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 29Jun65/ ORIG REF: 003/ OTH REF: 002

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

AUTHOR: Lyubin, V. M.; Fomina, V.I.; Tsyrlin, L. E.

TITLE: Characteristic features of the conductance and photoconductance of thin Se-As-layers in strong electric fields

SOURCE: AN SSSR. Doklady, v. 161, no. 2, 1965, 324-327

TOPIC TAGS: selenium arsenide layer, photoconductance, photoeffect, semiconductor material

ABSTRACT: Source materials were produced by fusing various compositions from 1Se, 1As to 2Se, 1As in the presence of air or CuO in vacuum which introduced oxygen into the alloy. Amorphous layers of these alloys 0.3--1.4-μ thick were vacuum-sprayed onto semitransparent electrodes (films of Pt, Au, Al, and $SnO_2$). In weak fields, the steady-state dark current value was attained in a few seconds while in

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sprayed onto [illegible]
fields, the steady-state dark current value was attained in a few seconds while in stronger fields ($10^5$v/cm), the dark current was still growing after 1 hour. Also the specimens suddenly exposed to light exhibited abnormal behavior. An explanation is advanced that the recombination in the above 3-component films is possible only at shallow levels subject to ionization in the fields about $5x10^4$ to $10^5$v/cm. [02]
Orig. art. has: 3 figures.

ASSOCIATION: none

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

L 43218-65

ACCESSION NR: AP5010158

SUBMITTED: 14Oct64 ENCL: 00 SUBCODE: SS

NO REF SOV: 009 OTHER: 004 ATD PRESS: 3238

Card 2/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

L 04603-67 EWT(1)/EWP(e)/EWT(m)/T/EWP(t)/ETI IJP(c) JD/GG/AT/WH

ACC NR: AP6033819 (N) SOURCE CODE: UR/0289/66/000/002/0051/0058

AUTHOR: Tsukerman, V. G.; Lyubin, V. M.; Vaynshteyn, E. Ye.; Fedorova, G. A.

ORG: Institute of Inorganic Chemistry, Siberian Department, AN SSSR, Novosibirsk (Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR)

TITLE: Photoelectric property of the selenium-arsenic-thallium semiconductor films in the x-ray spectral region

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 2, 1966, 51-58

TOPIC TAGS: semiconductor film, arsenic selenide, thallium, arsenic, photoconductive film, x ray photography, TV tube, PHOTOELECTRIC PROPERTY, X RAY SPECTRUM, SELENIUM

ABSTRACT: The effect of thallium addition on the photoconductivity of amorphous selenium-arsenic semiconductor films, 0.3—7 μ thick, has been studied extensively in view of the expected improvement in photoelectric property of Se—As films. The first experimental data of the authors on the Se—As—Tl films were published elsewhere [FTT, 1965]. The films of $Tl_2Se \cdot 10As_2Se_3$; $Tl_2Se \cdot 2As_2Se_3$; $Tl_2Se \cdot As_2Se_3$; $2Tl_2Se \cdot As_2Se_3$; and $3Tl_2Se \cdot As_2Se_3$ were deposited on various substrates by vacuum vaporization. The $Tl_2Se \cdot As_2Se_3$ films were found to be the most promising in application in the x-ray spectral region and displayed greater photoeffect than the best thallium-free films in the visible spectral region. Radiosensitivity of the

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L 04603-67

ACC NR: AP6033819

$Tl_2Se \cdot As_2Se_3$ films versus thickness and preparation technique, x-ray dosimetric and volt-ampere characteristics, kinetics and spectral distribution in the 0.5—1.5 A range of x-ray conductivity of the films were determined, as well as the quantum yield of the photoconductive effect and the energy of formation of a single electron-hole pair. A vidicon-type camera tube, photoconductive in the visible and x-ray spectral regions, was constructed with a $Tl_2Se \cdot As_2Se_3$ film deposited on a beryllium face plate as a target. The first experiments with such a vidicon tube showed a short rise time (of the order of tenths of a second) of the system and the feasibility of visualization of the x-ray pictures and of measurement of the radiation intensity in different areas of the target. Orig. art. has: 8 figures and 2 tables.

SUB CODE: 11/ SUBM DATE: 30Jul65/ ORIG REF: 017/ ATD PRESS: 5100

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

ACC NR: AP6022033 SOURCE CODE: UR/0120/66/000/003/0205/0207

AUTHOR: Tsukerman, V. G.; Vaynshteyn, E. Ye.; Lyubin, V. M.

ORG: Institute of Inorganic Chemistry, SO AN SSSR, Novosibirsk (Institut neorganicheskoy khimii SO AN SSSR)

TITLE: Use of semiconductor layers with high photo emf for registration of x radiation

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1966, 205-207

TOPIC TAGS: photosensitivity, electromeasuring device, x radiation

ABSTRACT: The behavior of CdTe and $Sb_2Se_3$ layers under x radiation is observed. The semiconductor layers were found to generate a reduced photo-emf when subjected to x radiation and to have high impedomies. The semiconductor layers were found to have a much lower sensitivity to x radiation when placed in vacuum than when placed in ordinary atmospheric conditions. This indicates that the observed reduction of the photo-emf under normal atmospheric operation is due to formation of increased ion concentration on the semiconductor surface caused by x radiation. If the semiconductor layers are placed in a medium filled with a gas having a relatively high ionization, then their sensitivity to x radiation is further increased. The semiconductor layers can be used as transducers and detectors of x radiation as well as for registration of any other ionizing radiation such as α-particles, for example. Orig. art. has: 1 table and 3 figures.

UDC: 539.293.535.215:621.386.82



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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

ACC NR: AP6022033

SUB CODE: 09, 18/ SUBM DATE: 08Jun65/ ORIG REF: 007/ OTH REF: 001

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

ACC NR: AP6034753 (A) SOURCE CODE: UR/0020/66/170/005/1052/1055

AUTHOR: Vaynshteyn, E. Ye. (deceased); Lyubin, V. M.; Fedorova, G. A.; Tsukerman, V.G.

ORG: Institute of Inorganic Chemistry, Siberian Department, Academy of Sciences SSSR (Institut neorganicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR); Institute of Geochemistry and Analytical Chemistry im. V. I. Vernadskiy, Academy of Sciences SSSR (Institut geokhimii i analiticheskoy khimii Akademii nauk SSSR)

TITLE: Some singularities of the internal photoeffect in layers of the Se-As-Tl system in the visible and x-ray regions of the spectrum

SOURCE: AN SSSR. Doklady, v. 170, no. 5, 1966, 1052-1055

TOPIC TAGS: selenium compound, arsenic compound optic material, thallium containing alloy, internal photoeffect, photoconductivity, x ray effect

ABSTRACT: The authors report the first results of attempts to increase the photoconductivity of Se-As thin semiconducting layers by introducing thallium. The raw material of the Se-As-Tl system was synthesized by fusing selenium, arsenic, and thallium in vacuum, and the investigated films were prepared by evaporation in vacuum by a method close to that described by the authors earlier (FTT v. 4, 401, 1962). The electrodes were tin dioxide and aluminum. The compositions of the layers investigated were $Tl_2Se \cdot 10As_2Se_3$, $Tl_2Se \cdot 2As_2Se_3$, $Tl_2Se \cdot As_2Se_3$, $2Tl_2Se \cdot As_2Se_3$, and $3Tl_2Se \cdot As_2Se_3$. The layer thickness ranged from 0.5 to 7 μ. The conductivity and photoconductivity were investigated by a method described in the earlier paper (and in Pribori i tekhnika

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ACC NR: AP6034753

eksperimenta, no. 6, 192, 1965). An increase in the thallium concentration reduced the dark resistance and shifted the spectral characteristics of the photoeffect toward the long-wave region. The greatest sensitivity was observed in $Tl_2Se \cdot As_2Se_3$. The x-ray sensitivity was practically constant in the range 0.5 - 1.5 Å, and then increased slowly with increasing x-ray wavelength. The photoeffect depends on the polarity of the voltage applied. At negative potential on the tin-dioxide electrode the spectrum has a single maximum near 350 - 370 nm and depends little on the thickness of the layer. For positive potential, maxima appear both at short and long wavelengths (near 600 nm) and shift toward longer wavelength with increasing thickness. The results are interpreted from the point of view of the processes that occur in the regions near the electrodes. The dark current increased faster than linearly with increasing applied voltage, but the photocurrent exhibited rapid saturation. The quantum yield ranged from 800 to 1400 electrons/quantum and the ionization energy required to produce a single electron-hole pair is 5.7 - 10 ev, close in value to that obtained for many photoconductors sensitive to x-radiation. It is concluded that the Se-As-Tl system can serve as an effective photoconductor for both the visible and the x-ray regions. This report was presented by Academician V. V. Voyevodskiy 14 January 1966. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 20Dec65/ ORIG REF: 011

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

ACC NR: AR7000871 SOURCE CODE: UR/0058/66/000/009/E072/E073

AUTHOR: Kolomiyets, B. T.; Lyubin, V. M.; Mostovskiy, A. A.; Fedorova, Ye. I.

TITLE: Electric and photoelectric properties of some high-impedance semiconductor layers

SOURCE: Ref. zh. Fizika, Abs. 9E596

REF SOURCE: Sb. Elektrofotogr. i magnitografiya, Vil'nyus, 1965, 36-47

TOPIC TAGS: semiconducting material, photoelectric effect, photoconductivity vaporization, high impedance semiconductor layer, semiconductor, amorphous semiconductor

ABSTRACT: The results are presented of investigations of conductivity and photoconductivity of a large group of high-impedance photoconductors obtained in the form of thin layers by vaporization in vacuum. Layers of $As_2S_3$, $As_2Se_3$, GeS, $As_2Se_3$ and $Sb_2Se_3$, and an amorphous layer of Se, and Se with S and As additions, PbO, phtalocyanine without metal, and a number of ternary semiconductor materials ($AsSbS_3$, $AsSbSe_3$, $mAs_2S_3 \cdot nAs_2Se_3$, $Sb_2S_3 \cdot Sb_2Se_3$,

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ACC NR: AR7000871

$mSb_2S_3 \cdot nBi_2S_3$, $GeS \cdot Sb_2S_3$, and $GeSe \cdot As_2Se_3$) were investigated. Most of the layers have an amorphous structure. The sign of current carriers, the volt-ampere, lux-ampere, and spectral characteristics, photoelectric effect kinetics, dependence of dark current and photocurrent on temperature, the spectral dependence of the light-absorption coefficient, and the characteristics of discharge processes in layers charged by an electron beam or ions from a corona discharge, were investigated. Also, the main characteristics of the "porous" layers of numerous materials prepared by vaporization in an $N_2$ atmosphere were studied. The discussion of the experimental results is based on the concept of strengthening the phenomenon of trapping of current carriers in amorphous semiconductors. V. Lyubin. [Translation of abstract] [DW]

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBIN, V.P., FORMOZOV, A.A.

[Studies of the lower paleolithic in the U.S.S.R. during the last decade (1946-1955)] Izuchenie nizhnego paleolita SSSR za poslednie desiat' let (1946-1955); doklady Sovetskoi delegatsii na V Mezhdunarodnom kongresse antropologov i etnografov, Moskva, Izd-vo Akad. nauk SSSR, 1956. 24 p. [Parallel texts in Russian and French.]
(MIRA 10:4)

(Russia--Stone age)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

3(5) SOV/12-91-2-12/21

AUTHOR: Lyubin, V.P.

TITLE: The Alpine Cave Habitation of Kudaro I (South Osetiya). Preliminary Communication

PERIODICAL: Izvestiya Vsesoyuznogo geograficheskogo obshchestva, 1959, Nr 2, pp 173 - 183 (USSR)

ABSTRACT: The author describes the area in the Southern Osetiya which is situated south of the Central Caucasian mountain ridge. It is composed mainly of lime formations and is noted for its many caverns and grottos, some of which have not been explored yet. In 1955, a search was made within the Dzhavskiy rayon up the Kadaro canyon along the Dzhodzhora River. The southern slope of the Chasavali-Khokh mountain, on the right bank of this river, is known to possess few caverns. The Kudaro I cavern is 250 m above sea level. Two other caverns are 20 to 30 m below it, but the entrance of one is almost completely blocked

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SOV/12-91-2-12/21

The Alpine Cave Habitation of Kudaro I (South Osetiya). Preliminary Communication

by stones, and the other contains an underground lake, Styr-Leget. A few other caverns are 80 to 100 m lower down. The Kudaro I cavern has a gallery 50 m long, 3 to 4 m wide, with a large chamber in the middle. It has 2 entrances, which ventilate the interior of the cavern and therefore made the cavern suitable for human habitation. No doubt it was used as such for hundreds of thousands of years as proved by a collection of about 1,000 flint instruments and remains of animals. There are 6 diagrams, 1 table and 14 Soviet references.

Card 2/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

VERESHCHAGIN, N.K., prof.; LYUBIN, V.P., kand. istoricheskikh nauk

When did monkeys live in the Caucasus? Priroda no.6:101-103 Je '60. (MIRA 13:6)

1. Zoologicheskiy institut AN SSSR, Leningrad (for Vereshchagin).
2. Institut arkheologii AN SSSR, Leningrad (for Lyubin).
(Caucasus—Monkeys)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBIN, V.P.; KOLBUTOV, A.D.

Ancient site of man in the U.S.S.R. and Quaternary paleogeography. Trudy Kom.chetv.per. no.26:74-88 '61. (MIRA 15:3)
(Transcaucasia--Antiquities) (Transcaucasia--Paleogeography)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBIN, V.P.; BALYAN, S.P.

Recent finds of paleolithic culture on the volcanic upland of the Armenian S.S.R. Dokl. AN Arm. SSR 33 no.2:67-72 '61. (MIRA 14:10)

1. Institut material'noy kul'tury i arkheologii AN SSSR i Yerevanskiy gosudarstvennyy universitet. Predstavleno chlenom-korrespondentom AN Armyanskoy SSR A.A. Gabriyelyanom.
(Armenia—Stone implements)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBIN, V.P.; PETRAKOV, I.I.

Moustier site Zolotarikha near Belev (Tula Province). Biul. Kom. chetv. per. no.29:171-174 '64. (MIRA 17:8)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYAKHOVSKIY, L.K., kand. tekhn. nauk; LYUBIN, Ya.L., inzh.

Effect of passive connections on the design and operation of the feed control mechanism of a piston pump. Khim. i neft. mashinostr. no.3:15-18 S '64. (MIRA 17:12)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

KOZACHENKO, V., kandidat tekhnicheskikh nauk; LYUBIN, Ye., inzhener.

Hydromechanical trenchless laying of large diameter water pipes. Zhil.-kom.khoz. 5 no.8:20-21 '55. (MIRA 8:6)

1. Glavnyy inzhener Dnepropetrovskogo stroitel'no-montazhnogo upravleniya No. 6 tresta "Ukrsantekhmontazh" (for Lyubin).
(Water pipes)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

Lyubina, A. G.

*Comparison of the Thermal Noises of Some Materials by a Zero Method. V. S. Troitsky, A. G. Lyubina, and A. V. Zolotov (*Doklady Akad. Nauk S.S.S.R.*, 1951, 80, (4), 583–586).—[In Russian]. Materials used were Nichrome, Cu, Mn, Constantan, W, Ag, Ni, Mo, Fe, graphite, and 1% KCl soln. with Pt electrodes. The results obtained are in agreement with Naiquist's formula $w/4RT = k'$, in which $w$ is the spectral $d$ of the noise, $R$ the resistance of the specimen, and $T$ its temp. The const. $k'$ does not depend on the material or its condition, nor on $R$ or $T$; this does not agree with the results of Pumper (*ibid.*, 1949, 68, 277; *M.A.*, 20, 827). $k'$ is probably equal to Boltzmann's const.—G. V. E. T.

10/21/54

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

621.38 : 537.311.1

240. Experimental study of the thermal noise of some conductors. V. S. TROITSKII, A. G. LYUBINA AND A. V. ZOLOTOV. *Zh. eksper. teor. fiz.*, 23, No. 4 (10) 455–62 (1953) In Russian.

The formula for the spectral noise density $w = 4kRT$, where $k$ = Boltzmann's constant, $R$ = resistance, $T$ = abs. temperature of the specimen, was verified to ½% at frequencies 52, 200, 3000 kc/s for chrome nickel, 1% KCl solution, Cu, Mn, Constantan, W, Ag, Ni, Mo, Fe and graphite in the temperature range $T$ = 300–700°K and $R$ = 50–1200 Ω. The effect of annealing chrome nickel in a cycle through 500°C was found to have no effect on $w$. The instrument used was a null fluctuation meter.

W. J. SWIATECKI (B)

Gor'kiy State Univ

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

GORELIK, Gabriel' Semenovich[deceased]; LYUBINA, Aleksandra Grigor'yevna; MARKUS, F.A., otv. za vypusk

[Inertial and noninertial recording systems in mechanics]Inertsial'nye i neinertsial'nye sistemy otcheta v mekhanike; uchebnoe posobie dlia studentov. Gor'kii, Gor'kovskii gos. univ. im. N.I. Lobachevskogo, 1962. 46 p. (MIRA 15:12)
(Mechanics)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

GORELIK, Gabriel' Somonovich [deceased]; LYUBINA, Aleksandra Grigor'yevna; MARKUS, F.A., otv. za vypusk

[Inertial and noninertial recording systems in mechanics] Inertsial'nye i neinertsial'nye sistemy otcheta v mekhanike; uchebnoe posobie dlia studentov. Gor'kii, Gor'kovskii gos. univ. im. N.I. Lobachevskogo, 1962. 46 p. (MIRA 15:12)
(Mechanics)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

for multichannel spectral or correlation analysis of random processes

SOURCE: Vsesoyuznyy simpozium po difraktsii voln. 3rd, Tbilisi, 1964. Referaty dokladov. Moscow, 1964, 242-243

TOPIC TAGS: diffraction pattern, random process, spectrum determination, Fraunhofer line, optical information processing

ABSTRACT: Various types of optical equipment may be used for both successive and parallel analysis of the spectra and correlation functions of transparent objects. The diffractometer is one of the instruments which may be used in this manner. The spectra or correlation functions for a large number of processes can be determined simultaneously by observing the Fraunhofer diffraction pattern from individual transparent objects or combinations of objects. For instance, the spectra and correlation functions may be found for diffraction processes recorded as lines of variable density on a photographic film. In this method, the maximum number of



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ACCESSION NR: AT5013929

simultaneously operating channels depends on the quality of the optical system and the film. In actual practice, the instrument can handle a great deal of information in a comparatively short period of time, which gives it a considerable advantage over electronic devices and even over digital computers. The instrument may also be used for signal separation and for detecting weak signals against a noisy background. The resolution and dynamic range, determined for sinusoidal signals, depend on the size of the "window" in the optical system and on the quality of the readout system. The instrument may be used as an optimum matched filter for detecting a special form of signal. In this case, the Fresnel diffraction pattern is used. "Film noises" (amplitude and phase distortions in the light wave which appear after passage through a uniformly fogged film) limit both the resolution and the dynamic range of the device. [14]

ASSOCIATION: none

SUBMITTED: 09Sep64 ENCL: 00 SUB CODE: OP, EC

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4007

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APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINA, A.S., deputat Verkhovnogo Soveta SSSR; KUROCHKINA, Ye.A.

Possibilities of increasing the productivity of farm animals on the "Ped'ianovskii" State Farm. Veterinariia 39 no.6:26-28 Je '62 (MIRA 18:1)

1. Glavnyy zootekhnik sovkhoza "Pes'yanovskiy" (for Lyubina).
2. Zaveduyushchaya mezhtayonnoy veterinarno-bakteriologicheskoy laboratoriyey, Ishimskiy rayon, Tyumenskoy oblasti (for Kurochkina).

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

NEMENOVA, Yu.M.; KRYUCHKOVA, G.M.; LYUBINA, A.Ya.; POLEYES, M.E.; KUVSHINSKIY, M.N., red.

[Manual on the technique of laboratory work] Praktikum po tekhnike laboratornykh rabot. Moskva, Meditsina, 1965. 207 p. (MIRA 18:11)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

KOFMAN, D.M., dotsent, kand.tekhn.nauk; MIKHAYLOV, S.M.; LYUBINA, G.I.

Single-stage drawing on combing and drawing machines. Tekst.prom. 20 no.3:46-49 Mr '60. (MIRA 14:5)

1. Nachal'nik pryadil'noy fabriki No.1 pryadil'no-nitochnogo kombinata imeni Kirova (for Mikhaylov). 2. Zaveduyushchiy laboratoriyey pryadil'noy fabriki No.1 pryadil'no-nitochnogo kombinata imeni Kirova (for Lyubina).

(Spinning machinery)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

RATNER, Yu.A., prof.; LYUBINA, N.I., dotsent

Activity of the Oncological Society of the Tatar A.S.S.R. in 1961. Vop onk. 8 no. 10:122 '62. (MIRA 17:7)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

SHABAD, L.M., prof.; RABINOVICH, Ye.A.; RATNER, Yu.A., prof.; LYUBINA, N.I.

Brief news. Vop. onk. 11 no.7:109-111 '65. (MIRA 18:9)

1. Deystvitel'nyy chlen AMN SSSR (for Shabad).

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

RATNER, Yu.A., prof.; LYUBINA, N.I., dotsent

Report on the activity of the Society of Oncologists [illegible] A.S.S.R. for 1962. Vop. onk. 9 no.10 124 1963. [illegible]

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINA, N.I., dotsent; GRITSKIKH, T.G.

Clinical aspects and treatment of gastric sarcomas. Kaz. med. zhur. no.2:52-55 Mr-Ap '62. (MIRA 15:6)

1. Kafedra khirurgii i onkologii (zav. - prof. Yu.A. Ratner) Kazanskogo Gosudarstvennogo instituta dlya usovershenstvovaniya vrachey imeni V.I. Lenina i onkologicheskiy dispanser Tatarskoy ASSR (glavnyy vrach - A.K. Mukhamed'yarova).
(STOMACH--CANCER)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

VYLEGZHANIN, N.I., dotsent; ZELENKOVA, N.I.; MESSINOVA, O.V.; KLUCHAREVA, S.G.; KHAYKINSON, N.[illegible]; KHARITONOV, [illegible].K.; SIGAL, [illegible], dotsent; GOL'DSHTEYN, D.Ye., prof.; LYUBINA, N.I. dotsent; [illegible], I.L., dotsent; RATNER, Yu.A., prof.; DANILOV, I.V., prof.; [illegible]KHAMED'-YAROVA, A.K.;

Conference of physicians of the city of Kazan concerning the results of the Eighth International Cancer Research Congress Kaz. med. zhur. no.[illegible]:72-90 '62 ([illegible] 17:5)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

RUSALEV, Nikolay Vlasovich; LYUBINA, R.M., red.

[Moscow; a concise manual for newcomers] Moskva; kratkii spravochnik dlia priezzhaiushchikh. Moskva, Stroiizdat, 1964. 164 p. (MIRA 17:12)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

MARKUS, Tsetsiliya Abramovna; LYUBINA, [illegible], red.

[Hygiene in hairdressing; manual for workers in barber and beauty shops] Gigiena parikmakherskogo dela; posobie dlia rabotnikov parikmakherskikh. Moskva, Stroiizdat, 1964. 64 p. (MIRA 18:8)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINA, R.M., red.

[Safety engineering regulations for operating the electrical systems of municipal power distribution networks with voltages up to 1000 volts] Pravila tekhniki bezopasnosti pri ekspluatatsii elektroustanovok gorodskikh elektricheskikh setei napriazheniem do 1000 v. 3. izd., perer. i dop. Moskva, Stroiizdat, 1964. 73 p. (MIRA 17:11)

1. Russia (1917- R.S.F.S.R.) Upravleniye kommunal'noy energetiki.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

KAPLUN, Yefim Iosifovich; SMAL'NOV, A.P., spets. red.; LYUBINA, A.M., red.

[Handbook for insulation workers on city gas pipelines] Pamiatka dlia izolirovshchika gorodskikh gazoprovodov. Moskva, Stroiizdat, 1964. 46 p. (MIRA 18:2)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

TSVETKOV, V.N.; LYUBINA, S.Ya.

Flow birefringence of polybutylmethacrylate solutions. Vysokom. soed. 1 no.6:857-862 Je '59. (MIRA 12:10)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Methacrylic acid) (Refraction, Double)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

TSVETKOV, V.N.; KISELEV, L.L.; FROLOVA, L.Yu.; LYUBINA, S.Ya.

Optical anisotropy and conformation of molecules of soluble (transfer) ribonucleic acid (S-RNA). Vysokom. soed. 6 no.3:568-570 Mr'64. (MIRA 17:5)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

TSVETKOV, V.N.; LYUBINA, S.Ya.

Volume effects and shape asymmetry of macromolecular chains in solution. Vysokom.soed. 2 no.1:75-81 Ja '60. (MIRA 13:5)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Macromolecular compounds)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

S/190/62/004/004/013/019
B117/B138

15.8070

AUTHORS: Tsvetkov, V. N., Vitovskaya, M. G., Lyubina, S. Ya.

TITLE: Synthesis and investigation of the structure of catalytic poly-n-butyl methacrylate. II. Optical anisotropy of molecules of the poly-n-butyl methacrylate stereoisomers

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 4, 1962, 577-582

TEXT: Dynamic double refraction in solutions (benzene) and photoelastic effect in films were studied with atactic, syndyotactic and isotactic stereoisomers of poly-n-butyl methacrylate (PBMA). The optical measurements made by the standard method showed that double refraction $\Delta n$ as a function of the speed gradient is linear for all stereoisomers. Dynamic-optical properties of solutions of syndyotactic and atactic polymers practically coincide. The negative optical anisotropy of these samples proved to be seven times higher than that of isotactic PBMA. The photoelastic effect of syndyo- and atactic polymers was measured at +70 to 0°C and the isotactic polymer at +40° to -25°C. The photoelastic properties of syndyo- and atactic polymers also almost agree. In a highly elastic state negative anisotropy was established for them. In the temperature range investigated, the anisotropy of isotactic

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samples proved to be positive and, in the highly elastic state of the sample, two to three times higher than the photoelastic constant $\varepsilon$ of the two others. Conclusion: The data determined point to a similarity of atactic and syndiotactic microstructures. During transition from atactic to isotactic structure a reduction of the negative anisotropy of the macromolecule takes place which leads to a change of the sign of the photoelastic coefficient. This strong change of anisotropy may be explained by slight change of the rotational character in the ester side group. High sensitivity of the optical anisotropy of molecules to their spatial arrangement seems to be characteristic for polymers of the methacrylate series. It is, therefore, possible that the determination of the optical anisotropy of macromelecules of similar polymeric systems could be used as a sensitive method of investigating their spatial arrangement. There are 5 figures and 1 table.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds AS USSR)

SUBMITTED: March 18, 1961



APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

TSVETKOV, V.N.; MITIN, Yu.V.; GLUSHENKOVA, V.R.; GRISHCHENKO, A.Ye.; BOYTSOVA, N.N.; LYUBINA, S.Ya.

Electric and dynamic birefringence of poly - γ-benzyl-L-glutamate solutions. Vysokom.soed. 5 no.3:453-459 Mr '63. (MIRA 16:3)

1. Institit vysokomolekulyarnykh soyedineniy AN SSSR i Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta.
(Glutamic acid—Optical properties) (Refraction, Double)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

TSVETKOV, V.N.; KISELEV, L.L.; LYUBINA, S.Ya.; FROLOVA, L.Yu.; KLENIN, S.I.; SKAZKA, V.S.; NIKITIN, N.A.

Hydrodynamic properties and optical anisotropy of transfer ribonucleic acids in aqueous solutions. Biokhimiia 30 no.2:302-309 Mr-Ap '65. (MIRA 18:7)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR, Leningrad i Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR, Moskva.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

SHABAD, V.K., inzh.; LYUBINA, V.[illegible], inzh.

Regulation of a large synchronous compensator in order to increase its load carrying capacity in inductive operation. Elektrichestvo no.1:[illegible]-[illegible] [illegible].

1. Vsesoyuznyy elektrotekhnicheskiy institut im. [illegible].

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINA, Ye.I.

Possibility for the approximate computation of the concentration of nonelectrolytes in the arterial [illegible] as related to the exposure. Prim. mat. metod. [illegible] -158 [illegible] 4.

[illegible]

1. Institut [illegible] Leningrad.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINA, YE. I. and GOLUBEV, A. A.

"New Data on the possibility of Calculating Tentative Maximum Permissible Concentrations of Toxic Substances."

Report presented at the 2nd All-Union Scientific Conference on the Hygiene and Toxicology of Pesticides, Ministry of Health USSR Committee on the Study and Regulation of New Pioscnous Chemicals of the Main State Sanitary Inspection USSR and Kiev Institute of Labor Hygiene and Occupational Diseases, Kiev 1.-19 Oct 1962.
(Gigiyena i Sanitariya, No. 3, 1963 p. 104-105.)

Kiev Institute of Labor Hygiene and Occupational Diseases.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINETS, V.I.

Air tumor of the larynx in a patient with pulmonary tuberculosis. Zhur. ush. nos. i gorl. bol. 21 no.4:74-75 Jl-Ag '61. (MIRA 15:1)

1. Iz L'vovskoy 2-y oblastnoy tuberkuleznoy bol'nitsy.
(LARYNX—TUMORS) (TUBERCULOSIS)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINOV, A. V.

AID Nr. 971-9 20 May

IGNITION OF METHANE MIXTURES IN SHOCK WAVES (USSR)

Borisov, A. A., S. M. Kogarko, and A. V. Lyubinov. IN: Akademiya nauk SSSR. Doklady, v. 149, no. 4, 1 Apr 1963, 869-871.

S/020/63/149/004/017/025

In a study of the effect of pressure and gas composition on ignition delay, the ignition of methane-oxygen mixtures containing variable amounts of inert diluents were investigated in reflected shock waves by means of a shock tube, an ionization gauge, a pressure transducer, and Schlieren photography. Curves of log $\tau$($\tau$ = ignition delay in sec) versus the inverse temperature at 12.5 to 100 mm Hg were obtained for the following mixtures: 10% $CH_4$ + 90% air, 10% $CH_4$ + 20% $O_2$ + 70% Ar, and 10% $CH_4$ + 90% $O_2$. Ignition delays < 20 μsec were more strongly dependent on temperature than those > 20 μsec. Mixtures diluted with nitrogen exhibited smaller ignition delays than those diluted with argon; this is contrary to predictions based on the thermal ignition theory. With strongly diluted mixtures or mixtures containing excess methane, the initial oxidation stage is apparently controlled by the thermal decomposition of methane. The study was made at the Institute of Chemical Physics, Academy of Sciences USSR. [PV]

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINOV, V.G.

ARIPOV, R. A., KOPELOVA, D. K., LYUBINOV, V.G., NIKITIN, A. V., PODGORETSKIY, M.I., PORTNOVA, S. I., RISAEV, H., STELMAKOV, V. N., TRKA, S., and SHKLOVSKIY, A. I.
RISAYEV G

"Inelastic Interactions of $\pi^-$ Mesons with Nucleons at 7 Gev"

report presented at the Intl. Conference on High Energy Physics, Geneva, 4-11 July 1962

Joint Institute for Nuclear Research,
Laboratory of High Energy, Dubna, 1962

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINOVA, Ye.A.

Heat transfer by exitons in the earth's crust. Trudy Inst. fiz. zem. no.11:72-78 '60. (MIRA 13:8)
(Heat—Transmission) (Nuclear geophysics)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINETSKIY, V. S.

Problems of determining dimensions of Diesel engine fuel pumps. Moskva, Glavnaia red. aviatsionnoi lit-ry, 1936. 58 p. (Trudy TSentral'nogo nauchno-issledovatel'skogo instituta aviatsionnogo motorostroeniia im. P. I. Baranova, vyp. 23)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINETSKIY, V. S.

"Investigation of the Process of Fuel Feed in a Diesel Engine According to a Given Characteristic of Injection." Thesis for degree of Cand. Technical Sci. Sub 12 Dec 50, Moscow Order of Labor Red Banner Higher Technical School imeni N. E. Bauman

Summary 71, 4 Sep 52, Dissertations for Degrees in Science and Engineering in Moscow in 1950. From Vechernyaya Moskva, Jan-Dec. 1950.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

Lyubinov, V.A.

USSR/ Physics

Card 1/1 Pub. 22 - 11/49

Authors : Lyubinov, V. A., Eliseev, G. P., Kosmachovskiy, V. K. and Kovda, A. V.

Title : Probable ionization of $\mu^-$-mesons in gas in the impulse range between $2.10^8$ and $1.2.10^8$ ev/c

Periodical : Dok. AN SSSR 100/5, 883-886, Feb 11, 1955

Abstract : Experiments with relativistic $\mu$ - mesons are described. The experiments were conducted for the purpose of ascertaining the effect of the velocites of $\mu$ -mesons (of the energy range between $1.10^8$-$1.2.10^8$ ev/c ) on their ionizing characteristics. The experiments were conducted with the help of a 4-fayer proportional counter and of a modern mass-spectrograph. Twelve references: 2 USA, 2 German, 3 British and 5 USSR (1932-1953). Graphs.

Institution : .....

Presented by: Academician A. A. Alikhanov, July 27, 1954

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

L 09054-67

ACC NR: AP6031044 SOURCE CODE: UR.0146/66/009/004/0105/0110

38

AUTHOR: Dronov, V. V.; Lyubinov, Yu. V.

ORG: Leningrad Electrotechnical Institute im. V. I. Ul'yanov-Lenin (Leningradskiy elektrotekhnickeskiy institut)

TITLE: Moldulation of radiant flux with two grids

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 4, 1966, 105-110

TOPIC TAGS: pulse code modulation, radiant flux, electron grid, communication coding

ABSTRACT: An analytical investigation of the nature of modulated radiant flux has been carried out with the aid of two grids or rasters. Modulation with two grids opens great prospects for processing and transmitting coded information in comparison with the electron flux modulation of a single grid or raster. The paper was recommended by the Department of Automatic Control System. Orig. art. has: 1 figure and 1 formula. [Based on authors' abstract]

SUB CODE: 17/ SUBM DATE: 23Oct65/ ORIG REF: 001/

Card 1/1 nst UDC: 535.8

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINSKAYA, L. M.

21

The stage of industrial development of the underground gasification of coal. L. M. Lyubinskaya. *Vestnik Inzhenerov Tekh.* 1938, 275-80; *Chem. Zentr.* 1939, II, 2384.

After a historical review of the question, the equipment and construction recommended for the solution of the problem in Russia are discussed. An expt. plant using a current of air at 2.1-2.5 atms. is described. The gas obtained contains $CO_2$ 10, CO 18, $H_2$ 15, $CH_4$ 2, O 0.2 and $N_2$ 54.8%. The cost is about a third that of a generator gas (Russian prices). M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINSKAYA, L. M.

Ca

21

**Temperature of self-inflammation of a coal surface washed by a gas stream.** A. B. Chernyshev and L. M. Lyubinskaya (G. M. Krzhizhanovsky Power Inst., Acad. Sci. U.S.S.R.). *Compt. rend. akad. sci. U.R.S.S.* 47, 281-4; *Doklady Akad. Nauk S.S.S.R.* 47, 279-82(1945).

The ignition ranges of various Russian coals and cokes under the influence of O contg. gas blasts were det'd. for the purpose of underground gasification. Under the exptl. conditions used each type of coal was found to have a definite temp. range of ignition, which can be increased by previous heat-treatment or decreased by a larger O content in the blast gas. The rate of ignition is accelerated by increasing the temp. of the blast gas or by increasing its O content. Fred Fisher

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINSKAYA, L. M.

Inflammable gases and their burning in household appliances. Moskva, Gos. nauch.-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1946. 94 p. (50-18597)

TH7453.L5

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINSKAYA, M.A.

ZUYEV, M.I.; KULTYGIN, V.S.; VINOGRAD, M.I.; OSTAPENKO, A.V.; LYUBINSKAYA, M.A.; DZUGUTOV, M.Ya.; SLAVKIN, V.S., redaktor; GOLYATKINA, A.G., redaktor; EVENSON, I.M., tekhnicheskiy redaktor.

[Plasticity of steel at high temperatures] Plastichnost' stali pri vysokikh temperaturakh. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 100 p. (MLRA 8:3)
(Steel--Metallography)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

~~LUBI~~N LYUBINSKAYA, M.A.

KULTYGIN, V.S., inzhener; VINOGRAD, M.I., kandidat tekhnicheskikh nauk; LYUBINSKAYA, M.A., inzhener.

Effect of the conditions of heat treatment on the magnetic properties of EKh3 steel. Stal' 16 no.12:1137-1138 D '56. (MLRA 10:8)

1. Zavod "Elektrostal'."
(Steel--Heat treatment) (Steel--Magnetic properties)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

Zavod "Elektrosil"

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

Lyubinskaya, M.A.

130-58-2-7/21

AUTHORS: Vinograd, M.I., Candidate of Technical Sciences, Lyubinskaya, M.A., Orekhov, N.D., Engineers

TITLE: Effect of Cast Refractories on Impurity Content in Ball Bearing Steel (Vliyaniye razlivochnykh ogneuporov na zagryaznennost' sharikopodshipnikovoy stali)

PERIODICAL: Metallurg, 1958, Nr 2, pp 12 - 15 (USSR)

ABSTRACT: The authors describe experiments at the "Elektrostal'" Works jointly with the Moskovskiy institut stali (Moscow Steel Institute) and Vsesoyuznyy nauchno-issledovatel'skiy institut ogneuporov (All-Union Refractories Research Institute) on the sources of impurities in ball-bearing steel, their aim being to find the best refractories for the ladle, runners and for bottom-pouring. Engineers V.S. Nikol'skiy and V.S. Laktionov and a representative of Gisogneupor, S.D. Skorokhod, participated in the work. Test refractories (properties shown in Table 1 for ladle and runners and in Table 3 for bottom pouring) were made from mixes containing $Ca^{45}$ to give 150 millicuries per ton of mix. The steel was melted in 20-ton electric-arc furnaces and bottom-poured into 500-kg ingots. These were rolled and specimens were cut from the product and measured for radio-activity either by the GOST 801-47 scale or by isolating the inclusions

Card1/2

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130-58-2-7/21

Effect of Cast Refractories on Impurity Content in Ball Bearing Steel

electrolytically. The results for ladle and runner refractories show (Table 2) that of the three types tested (fireclay, kaolin and high-alumina) the high-alumina (72 - 75% $Al_2O_3$, 5.6% porosity) was best. The extent of contamination was found to rise with metal temperature. For bottom-pouring refractories, little difference was observed (Table 5) between the types tested; fireclay, graphite-fireclay, kaolin, high-alumina. There are 5 tables.

ASSOCIATION: Zavod "Elektrostal'" ("Elektrostal'" Works)

AVAILABLE: Library of Congress

Card 2/2

1. Steel-Impurities 2. Ball bearings-Production

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

ACC NR: AP6028193 (A) SOURCE CODE: UR/0032/66/032/006/0719/0720

AUTHORS: Arkhipova, A. V.; Kudel'kin, V. P.; Lyubinskaya, M. Ya.; Mirenin, Ye. N.; Popova, L. G.

ORG: "Elektrostal'" Factory (Zavod "Elektrostal'")

TITLE: Determination of decarburization in bright-drawn high-speed steel by the thermoelectric potential method

SOURCE: Zavodskaya laboratoriya, v. 32, no. 6, 1966, 719-720

TOPIC TAGS: thermoelectric sensor, decarburization, high speed steel, carbon steel/ R9 tool steel, R18 tool steel

ABSTRACT: A method for determining decarburization in bright-drawn high-speed steel is briefly described. The method is based on measuring the thermoelectric potential between the metal surface and a copper electrode clamped to the surface, and by comparing this potential with the potential obtained between couples of known composition. Experiments were performed on steels R9, R18, and others (not listed in report) using a copper electrode at 160--170C (some results are tabulated). The decarburization criterion is specified by GOST 5952-63 as <0.7% carbon in the surface layer for steel R18 and <0.85% for steel R9. It was found that a meter reading of >7 (unspecified scale) indicated decarburization in 72--100% of the specimens (checked by chemical analysis). It was concluded that this method is sufficiently sensitive to carbon content in the surface layer to be of practical importance. Orig. art. has: 1 figure and 1 table.

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 002 UDC: 620.183

Card 1/1

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

ALIKHANYAN, S.I.; BORISOVA, L.N.; KLEPIKOVA, F.S.; LYUBINSKAYA, S.I.; MINDLIN, S.Z.

New active strains of Penicillium ("New hybrid"). Antibiotiki 1 no.3:3-6 My-Je '56. (MLRA 9:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov
(PENICILLIUM,
new strains (Rus))

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

BART[illegible] [illegible] [illegible]NSKAYA, S.I. (Moskva)

[illegible]uxotrophic mutants of the producents of novobiocin. Antibiotiki 10 no.7:589-595 Jl '65. (MIRA 18:9)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINSKIY, . .

Strain No.35 of Actinomyces aureofaciens as a producer of novobiocin. Antibiotiki 10 no.9:778-784 S '65. (MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

ALIKHANYAN, S.I.; CHERNOSVITOVA, V.I.; LYUBINSKAYA, S.I.

Some characteristics of the selection of highly active strains of penicillin-producing organisms. Antibiotiki 7 no.6:491-495 Je '62. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(PENICILLIUM)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

S/747/62/000/000/022/025
D243/D307

AUTHORS: Alikhanyan, S. I., Yerokhina, L. I. and Lyubinskaya, S. I.

TITLE: Peculiarities of the induced mutation process in microorganisms

SOURCE: Radiatsionnaya genetika; sbornik rabot. Otd. biol. nauk AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 319-332

TEXT: The authors wished to study the mechanism of mutation formation in actinomycetes, after irradiation with uv, and the effect of visible light on the reactivation of cells inactivated by ultraviolet. Aqueous spore suspensions of H-6 Act. olivaceous received doses of 250 - 5,000 erg/mm$^2$ sec from a БУВ-15 (BUV-15) bactericidal lamp giving resonance radiation with a wavelength of 2537 Å. Visible light was between 3300 - 3600 Å. The constant factor for inactivation was 0.2, for mutagenesis 0.5. Visible light removed the cell inactivation effect and mutagenic effects caused by both high and low doses of uv. The extent of reactivation differs from that of frequency reduction and the processes involved seem to be indepen-

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dent. To determine the dose of visible light required for maximum reactivation and removal of the mutagenic effect, spores of H-6 Act. olivaceous were immediately after radiation subjected to photoreactivation for 1/2, 1, 2, 4 and 6 hours. Mutation formation was studied in the biochemical mutant No. 74 Act. olivaceous over a 7-hr. period. It was found that up to 50% only of irradiated spores were reactivated by visible light, and that when spore survival was increased 15,000 times, only 75% of uv-inclined mutations were removed. Two hours were required for visible light to extert its maximum effect on both processes. Mutation formation is a prolonged process and may vary at each locus in relation to the degree and nature of the initial damage. Some (instantaneous) mutations are never restored: They probably result from very severe damage to a locus, occurring during irradiation. The problem of changing radiosensitivity after repeated doses of radiation was also considered by reporting experiments carried out while seeking new Actinomycete strains with improved antibiotic activity. The strains investigated were Act. subtropicus, rimosus and spheroides. The hypothesis that a negative correlation exists between the ability to manufacture anti-



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biotics and radioinsensitivity was not confirmed. The organisms did not become accustomed to the effect of radiation, either in respect of the inactivation or the genetic effect. The gradual rise in sensitivity is the result of an 'accumulation' of the lethal genetic effect in a series of irradiated cell generations. There are 7 figures and 5 tables.



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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

KIS'N, M.V.; LYUBINSKAYA, S.I. (Moskva)

Determination of sex from dried blood stains. Sud.-med. [illegible] no.1:26-29 Ja-Mr '65.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

TYUBINSKAYA, S.I.; RAPOPORT, I.A.; BARTOSHEVICH, Yu.E.

Selecttion of Actinomyces spheroides producing novobiocin. Antibiotiki 10 no.6:511-517 Je '65. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

1. LYUBINSKAYA Z.V., VOLPIN YE.I., PROKA"OVA O.M.

2. USSR (600)

4. Vol'pin Ye. I.

7. "Sanitation and hygiene in the meat and milk industry." Moloch.prom. 14 no.2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINSKIY, B.E., inzhener; VINOGRAD, M.I., kandidat tekhnicheskikh nauk

Decarbonization in the course of heat treatment of steel. Stal' 15 no.6:540-544 Je '55. (MIRA 8:8)

1. Zavod "Elektrostal"
(Steel—Heat Treatment)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINSKIY, B.E.

PHASE I BOOK EXPLOITATION SOV/3559

Akademiya nauk SSSR. Institut metallurgii. Nauchnyy sovet po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. 5 (Investigations of Heat-Resistant Alloys, Vol 5) Moscow, Izd-vo AN SSSR, 1959. 423 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V.A. Klimov; Tech. Ed.: I.F. Kuz'min; Editorial Board: I.F. Bardin, Academician, G.V. Kurdyumov, Academician, N.V. Ageyev, Corresponding Member, USSR Academy of Sciences (Resp. Ed.), I.A. Oding, I.N. Pavlov, and I.F. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgical engineers, research workers in metallurgy, and may also be of interest to students of advanced courses in metallurgy.

COVERAGE: This book, consisting of a number of papers, deals with the properties of heat-resisting metals and alloys. Each of the papers is devoted to the study of the factors which affect the properties and behavior of metals. The effects of various elements such as Cr, Mo, and W on the heat-resisting properties of various alloys are studied. Deformability and workability of certain metals as related to the thermal conditions are the object of another study described. The problems of hydrogen embrittlement, diffusion and the deposition of ceramic coatings on metal surfaces by means of electrophoresis are examined. One paper describes the apparatus and methods used for growing monocrystals of metals. Boron-base metals are critically examined and evaluated. Results are given of studies of interatomic bonds and the behavior of atoms in metal. Tests of turbine and compressor blades are described. No personalities are mentioned. References accompany most of the articles.


Lanskaya, K.A., R.M. Kireyeva, and E.N. Gorchakova. EI 736 Austenitic Steel 19

Khinushin, F.P., Z.A. Shevankova, G.Ya. Moskalenko, N.K. Korpich, and B.E. Lyubinskiy. EI696 and EI 696A Heat-Resistant Chromium-Nickel-Titanium Steel 25

Ginzburg, Ye.S. On the Mechanism of Stress Relaxation in Austenitic Steels 32

Sklyarov, N.M., A.A. Platonova, E.M. Radetskaya, and L.K. Sklainov. The Effect of Thermal Stresses on Short-Time, Long-Time, and Vibration Strength of Alloys 39

Terekhov, K.I. Acceleration of Aging Cycles of EI 481 Heat-Resistant Austenitic Steel 42

Bychkov, Yu.F., A.F. Klimov, and A.N. Rozanov. The Effect of Alloying on the Longitudinal Modulus of Elasticity of Zirconium 50

Pivnik, Ye.M. Experimental Study of the Mechanism of Deformation of Nickel-Base Alloys 58

Banykh, G.A., and I.F. Zudin. The Effect of Complex Alloying With Vanadium, Chromium, and Tungsten on the Kinetics of Hardness Changes in the Annealing of Cold-Worked Ferrite 68

Syrakov, N.I. On the Problem of Studying the Kinetics of Structural Changes and Properties in One Specimen Within a Wide Temperature Range 75

Miuskov, V.F. On the "Angular" Relationship Between the Structure and Properties of Intercrystalline Boundaries. 78

Levin, E.E., B.M. Pivnik, V.S. Kultygin, and B.E. Lyubinskiy. Structure and Properties of Nickel Alloys under the Long-Time Action of High Temperature 90

Chernykh, S.F., V.D. Molchanova, and M.I. Mil'. The Effect of Hydrogen on Creep Strength of Certain Steels 98

Lagunzov, I.N., and V.K. Svyatoslavov. Creep Strength of Steam Superheating Pipes of Austenitic Steel in a State of Complex Stress 107

Lagunzov, I.N., and L.I. Fedotova. Effect of Temperature Variations on Creep Strength of 12 KhMF Steel 115

Pozov, K.V., V.A. Yagunova, and N.A. Khvorostukhina. Study of Hydrogen Embrittlement of Low-Carbon Steels 119

Yermakov, V.S. Artificial Aging of the EI437 Alloy under Cyclic Loads 126

Hrakov, N.I., and V.A. Pavlov. Study of Fine Structures of Aluminum-Magnesium and Copper-Nickel Solid Solutions 131

Rozanov, P.V. Regularities of the Thermokinetic Change in Austenite and the Problem of the Development of New Alloys 137

Lebedev, T.A., T.K. Marinets, and A.I. Yefremov. Study of the Endurance Limit of Metals by Means of Registering the Fatigue Curve 145


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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031210018-4

LYUBINSKIY, B.E.

PHASE I BOOK EXPLOITATION SOV/5559

Akademiya nauk SSSR. Institut metallurgii. Nauchnyy sovet po problems zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. 5 (Investigations of Heat-Resistant Alloys, Vol 5) Moscow, Izd-vo AN SSSR, 1959. 425 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V.A. Klimov; Tech. Ed.: I.F. Kuz'min; Editorial Board: I.P. Bardin, Academician, G.V. Kurdyumov, Academician, N.V. Ageyev, Corresponding Member, USSR Academy of Sciences (Resp. Ed.), I.A. Oding, I.M. Pavlov, and I.F. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgical engineers, research workers in metallurgy, and may also be of interest to students of advanced courses in metallurgy.

COVERAGE: This book, consisting of a number of papers, deals with the properties of heat-resisting metals and alloys. Each of the papers is devoted to the study of the factors which affect the properties and behavior of metals. The effects of various elements such as Cr, Mo, and W on the heat-resisting properties of various alloys are studied. Deformability and workability of certain metals as related to the thermal conditions are the object of another study described. The problems of hydrogen embrittlement, diffusion and the deposition of ceramic coatings on metal surfaces by means of electrophoresis are examined. One paper describes the apparatus and methods used for growing monocrystals of metals. Boron-base metals are critically examined and evaluated. Results are given of studies of interatomic bonds and the behavior of atoms in metal. Tests of turbine and compressor blades are described. No personalities are mentioned. References accompany most of the articles.


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SOV/133-59-5-22/31

AUTHORS: Vinograd, M.I., Candidate of Technical Sciences and Lyubinskiy, B.E., Engineer

TITLE: The Influence of the Technology of Production on Properties of Alloy Kh25N20 (Vliyaniye tekhnologii izgotovleniya na svoystva splava Kh25N20)

PERIODICAL: Stal', 1959, Nr 5, pp 448 - 451 (USSR)

ABSTRACT: Alloy Kh25N20 is used for electrodes for welding stainless and heat-resisting austenitic steels in order to obtain high-strength and high-corrosion resistance of welded seams. In order to determine the optimum composition and technology of production of this alloy, a series of heats were made in a 50 kg induction furnace with a basic chrome-magnesite lining. For comparison, the metal smelted in a 500 kg induction furnace and a 5-ton basic electric-arc furnace was also tested. The influence of silicon and carbon content of metal, composition of charge and the type of deoxidants were tested. Mechanical tests (impact strength, torsion) were carried out in a temperature range 900 - 1 250 °C. The experimental results are assembled in the table and Figures 1 and 2. It was found that high-

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The Influence of the Technology of Production on Properties of Alloy Kh25N20

temperature plastic properties are practically independent of the content of carbon within a range of 0.06 - 0.25%, and only slightly decrease with increasing silicon content from 0.40 to 1% but can substantially change, depending on the condition of smelting. In order to increase plastic properties of the alloy, the oxidation of silicon in the metal and the appearance of the silicon reduction process should be reduced to a minimum. For this purpose, it is necessary: a) for a rapid melting of the charge; b) that some titanium should be present in the charge (to prevent oxidation of silicon) and slag-forming materials should contain minimall amounts of silica; c) that metallic chromium for alloying should be replaced with scrap of steel Kh28 or ferrochromium and, d) that crucible or furnace lining should be in a good state and contain

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The Influence of the Technology of Production on Properties of Alloy Kh25N20

the smallest possible amount of silica.
There are 2 figures, 1 table and 5 references, 3 of which are Soviet and 2 English.

ASSOCIATION: Zavod "Elektrostal'" ("Elektrostal'" Works)

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AUTHORS: Levin, Ye. Ye., Pivnik, Ye. M., Candidates of Technical Sciences and Kultygin, V. S. and Lyubinskiy, B. E., Engineers

TITLE: Nickel-Base Alloys for Stationary Gas-Turbines

PERIODICAL: Energomashinostroyeniye, 1960, No 8, pp. 30-35

TEXT: The object of the investigation, described in the present paper, was to determine the effect of various factors on the high-temperature properties of two nickel-base alloys, ЭИ607 (EI607) and ЭИ607А (EI607A), whose composition is given below.

Table 1

| Alloy | C | Si | Mn | Cr | Ni | Mo |
|---|---|---|---|---|---|---|
| EI607 | ≤0.08 | ≤0.8 | ≤1.0 | 15-17 | Base | 1.0÷1.5 |
| EI607A | ≤0.08 | ≤0.8 | ≤1.0 | 16-17 | | 1.0÷1.5 |

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Nickel-Base Alloys for Stationary Gas-Turbines

| Alloy | Ti | Al | Fe | $\frac{Ti}{Al}$ | S | P |
|---|---|---|---|---|---|---|
| EI607 | 1.8÷2.3 | ≤0.5-1.0 | ≤3.0 | 2.7 | ≤0.02 | ≤0.02 |
| EI607A | 1.4÷1.8 | ≤0.5-1.0 | ≤3.0 | 2.1 | ≤0.02 | ≤0.02 |

The results of the experiments (tabulated or reproduced graphically) include data on the following subjects: (1) The effect of the titanium content on the deformation and time-to-rupture of both alloys, tested at 700°C under a stress of 25 kg/mm², the optimum titanium content was found to be approximately 1.8%; (2) the beneficial effect of addition of 1.56% Nb on the mechanical properties of the alloys, both at room temperature and at 700°C; (3) the beneficial effect of the so-called multi-stage heat treatment (quenching after 8 h at 1100°C followed by 2 h at 1000°C + 1 h at 900°C + 2 h at 800°C + 20 h at 750°C.); (4) the time-to-rupture characteristics of the two alloys at 650 and 700°C, determined on both notched and unnotched specimens; (5) the effe

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Nickel-Base Alloys for Stationary Gas-Turbines

of ageing at various temperatures on the mechanical properties of the alloys; (6) the effect of the variation of the conditions of the multi-stage heat treatment on the mechanical properties of the alloys; (7) the effect of increasing the aluminium content in the EI607A alloy on its mechanical properties and creep characteristics; (8) the effect of temperature and time on the microstructure of the alloys; and (9) quantitative data on the linear coefficient of thermal expansion, heat conductivity, and elastic moduli of the alloys at various temperature ranges. Some of the more important results are summarized in a table reproduced below under the following headings: name of the alloy (EI607, EI607A, EI607A plus aluminium); test temperature (°C); breaking stress (kg/mm$^2$) in creep of 1000, 5000, 10 000, and 100 000 h duration; and stress (kg/mm$^2$) required to produce total elongation of 1% after 10 000 h. It was concluded that, subject to their receiving a suitable (multi-stage) heat treatment, the alloys studied can be recommended as materials for blades and other load-carrying components of gas turbines. There are 12 tables, 6 figures and 5 Soviet references.

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Nickel-Base Alloys for Stationary Gas-Turbines

Table 11

ТАБЛИЦА 11

Жаропрочность сплавов ЭИ607, ЭИ607А и ЭИ607А + Al

| Сплав | Температура испытания °С | Предел длительной прочности, кГ/мм² за 1000 час. | 5000 | 10 000 | 100 000 | Предел ползучести, 1% за 100 000 час. |
|---|---|---|---|---|---|---|
| ЭИ607 | 650 | 45 | 32 | 28 | — | — |
| | 700 | 28 | 22 | 17 | — | — |
| ЭИ607А | 650 | 38 | 28 | 26 | 21 | — |
| | 700 | 23 | 22 | 20 | 15—17 | 13 |
| ЭИ607А+Al | 700 | 30 | 25 | 22 | 17 | — |
| | 750 | 21 | 16 | 13 | 10 | 8,5 |

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PHASE I BOOK EXPLOITATION SOV/5544

Tomashov, N. D., Doctor of Chemical Sciences, Professor, ed.

Korroziya i zashchita konstruktsionnykh metallicheskikh materialov; sbornik statey (Corrosion and Protection of Constructional Metals; Collection of Articles) Moscow, Mashgiz, 1961. 258 p. Errata slip inserted. 10,000 copies printed.

Ed. of Publishing House: N.P. Yevstaf'yeva; Tech. Ed.: G.V. Smirnova; Managing Ed. for Literature on Chemical and Textile Machine Building: V.I. Rybakova, Engineer.

PURPOSE: This collection of articles is intended for scientific and technical personnel concerned with the corrosion and protection of metals.

COVERAGE: The collection deals with problems of the corrosion of constructional metals in various environments and conditions. Articles discuss new methods for the investigation and testing of corrosion and give results of recent research conducted on the corrosion and protection of metal constructions. The corrosion of some new alloys is also considered. The collection includes articles generalizing the results of research conducted during the last 2-3 years in the Department for Corrosion of Metals of the Moskovskiy institut stali (Moscow Steel Institute). Some of the articles were written in cooperation with the laboratory staffs of the "Serp i molot" Plant and Khimicheskiy zavod im. M.I. Kalinina (Chemical Plant imeni M.I.Kalinin) and are based on investigations conducted at those plants. No personalities are mentioned. There are 219 references, Soviet and non-Soviet. References accompany each article.

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