L 17047-63 EWT(m)/BDS/ES(j) AFFTC/ S/205/63/003/002/005/024
ASD AR/K

AUTHORS: Dubinin, N. P., and Dubinina, L. G.

TITLE: Radiation and changes in nuclei of human cells during various stages of life cycle in tissue culture

PERIODICAL: Radiobiologiya, v. 3, no. 2, 1963, 181-190

TEXT: The work is concerned with the effect of ionizing radiation on nuclear changes in various phases of the cycles of human cells in the tissue culture. A number of new conclusions were made as this work was carried out by methods other than those described in the literature. Tissue cultures of 1-1/2 [illegible] were [illegible] tissue up to 2 mm in diameter were [illegible], trypsinized [illegible] in 0.25% solution of trypsin at [illegible]. [illegible] was taken and a fresh portion of trypsin added to the precipitate until complete separation of tissue particles into individual cells took place. The facts obtained in this work show strict dependence of the number and the types of nuclear changes on the phase of cycle of irradiated human cells. The effect of conditions of different phases of the cycle was found in the ratio of fusions and [illegible] of fragments [illegible] after synthesis of DNA as well as [illegible] DNA. Authors [illegible] a method of analysis of chromosomes in metaphase [illegible] human [illegible] analysis of chromosomes in anaphase. The article contains [illegible] tables. [illegible]

Card 1/2

L 17047-63

Radiation and changes S/205/63/003/002/005/024

figures and a 41-item bibliography. English-language references: Chy, H. I., Liles, M. H., and Passanok, Proc. Nat. Acad. Sci., 47, 830, 1961.

ASSOCIATION: Institut biologicheskoy fiziki, AN SSSR (Institute of Biological Physics, Academy of Sciences USSR), Moscow

SUBMITTED: July 27, 1962

Card 2/2

Dubinin, N. P., and T. Ya. Grozdova. IN: Akademiya nauk SSSR. Doklady, v. 148, no. 6, 21 Feb 1963, 1397-1399. S/020/63/148/006/022/023

Streptomycin introduced by micropipette into the abdominal cavity or added to food of *Drosophila melanogaster* (D-18 strain) has been found to possess antimutagenic properties when used in concentrations of $2.5 \cdot 10^{4}$ and $5 \cdot 10^{4}$ γ/ml. The Muller-5 method of analysis was used to determine the effects of streptomycin on the appearance of spontaneous, sex-linked, lethal recessive, point mutations. The inhibition of mutations was obtained by streptomycin after the period of mutability (which occurs in the post-meiotic stage) was passed, indicating either that streptomycin suppresses the natural mutagenic potential of chromosomes or that the influence of mutagenic factors, which appear before application of streptomycin, is delayed until sperm formation is completed. The data obtained indicate that the antimutagenic effect of streptomycin applies to point mutations as well as to chromosome reconstructions. Contrary to the findings of other investigators, streptomycin failed to show any protective effect against irradiation by γ-rays.

[BM]

Card 1/1

DUBININ, N.P.; MOKEYEVA, N.P.

Effect of fast neutrons on the nucleus in various phases of human cell cycle in tissue culture. Radiobiologiia 4 no.4: 554-562 '64. (MIRA 17:11)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

DUBININ, N.P.

Theory, history and contemporary problems of the gene. Biul. MOIP. Otd. biol. 69 no.1:5-19 Ja-F '64. (MIRA 17:4)

DUBININ, N.P.; SAPRYKINA, Ye.G.

Chain reaction accompanying chemical mutagenesis. Dokl. AN SSSR 158 no.4:956-959 O '64. (MIRA 17:11)

1. Institut biologicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Dubinin).

DUBININ, N.P.; SHCHERBAKOV, V.K.

Nature of the natural mutation process in Vicia faba and Allium fistulosum L. Dokl. AN SSSR 159 no.3:652-655 N '64
(MIRA 18:1)

1. Institut biologicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Dubinin).

DUBININ, N.P.; SHCHERBAKOV, V.K.; SURKOV, V.V.

Antimutagenic and mutagenic effect of amino acids possessing antiradiation action. Dokl. An SSSR 159 no.4:913-914 D '64
(MIRA 18:1)

1. Institut biologicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Dubinin).

DUBININ, N.P.; [illegible]; [illegible]

Radiation dosage and nuclear changes in human cells in the tissue culture following different phases of the cell cycle. Radiobiologiia 4 no.5:715-725 '64. (MIRA 18:4)

DUBININ, N.P.; KHVOSTOVA, V.V., kand. biolog. nauk

Atomic energy and breeding. Priroda 54 no.3:25-31 Mr '65. (MIRA 18:4)

1. Laboratoriya radiatsionnoy genetiki Instituta biologicheskoy fiziki AN SSSR, Moskva. 2. Chlen-korrespondent AN SSSR (for Dubinin).

DUBININ, N.P.

Some problems of modern genetics. Priroda 54 no.8:11-19 Ag '65.
(MIRA 18:8)

IVANOV, N.P.; KHRUSTOPAL, V.M.; MARIYENBAKH, L.M.; DUBININ, N.P.

The 31st International Congress of Foundrymen. Lit. proizv. no.2:1-2 F '65. (MIRA 18:6)

DUBININ, N.P.; SHCHERBAKOV, V.K.; KESLER, G.N.

Chromosome mutation spectrum at different levels of natural cell mutation. Dokl. AN SSSR 161 no.6:1434-1436 Ap '65. (MIRA 18:5)

1. Institut biologicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Dubinin).

DUBININ, N.P.; DUBININA, L.G.

Chemical protection against the genetic effect of small doses of ionizing radiations. Dokl. AN SSSR 164 no.6:1405-1406 O '65.
(MIRA 18:10)

1. Institut biologicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Dubinin).

DUBININ, N.P.; SHCHERBAKOV, V.K.; KESLER, G.N.; SUYKOVA, L.A.

Specificity of the object in induced mutagenesis. Dokl. AN SSSR 165 no.1:210-213 N '65. (MIRA 18:10)

1. Institut biologicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Dubinin).

[redacted], N.P.; Gel'bard, Ye.I.

Radiation aspects of genetic cell differentiation and the problem of malignant growth. Vest. AMN SSSR 20 no.3:53-58 '65. (MIRA 18:7)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

L 1967-66 EWT(1)/FS(v)-3 DD

ACCESSION NR: AP5021469 UR/0026/65/000/008/0011/0019
575

AUTHOR: Dubinin, N. P. (Corresponding member AN SSSR)

TITLE: Some problems of modern genetics

SOURCE: Priroda, no. 8, 1965, 11-19

TOPIC TAGS: genetics, biologic mutation, heredity, alga, cosmic radiation, artificial mutagenesis

ABSTRACT: The creation of a closed ecological system for interplanetary space flight is a problem for modern genetics. No group of existing plants and animals satisfies all the requirements. Thus, a whole series of biological forms with new properties must be created. For instance, in order for unicellular algae to liberate sufficient oxygen for the system, mutants with increased photosynthetic intensity must be developed. These algae must also withstand high temperatures and resist cosmic radiation. In place of present selection procedures, which are slow even with radiation and chemical mutagens, biologists must learn to direct mutations and thus obtain new organisms with given hereditary features. Studies on the molecular genetics of microorganisms represent a start in this direction. In addition, artificial polyploid forms of higher plants approximate directed mutations. Orig. art. has: 8 figures. [JS]

Card 1/2

L 1967-66

ACCESSION NR: AP5021469

ASSOCIATION: none

SUBMITTED: 00	ENCL: 00	SUB CODE: LS
NO REF SOV: 000	OTHER: 000	ATD PRESS: 4090

Card 2/2 DP

L 38252-66 EWT(1)/T JK

ACC NR: AP6028671 SOURCE CODE: UR/0020/66/166/005/1214/1216

AUTHOR: Dubinin, N. P. (Corresponding member AN SSSR); Suykova, L. A.; Shcherbakov, V. K. 23 B

ORG: Institute of Biological Physics, AN SSSR (Institut biologicheskoy fiziki AN SSSR)

TITLE: Specific modification of mutational variations of chromosomes induced by a chemical mutagen

SOURCE: AN SSSR. Doklady, v. 166, no. 5, 1966, 1214-1216

TOPIC TAGS: plant genetics, plant chemistry, biologic mutation

ABSTRACT: Mutation of cells of wheat plants (Triticum aestivum L.) under the action of β-(β', β"-dichlorethylamino) ethylphosphonic acid diethyl ester (K-32) was studied. Treatment of wheat sprouts with K-32 alone resulted in 7.6% of chromatid dicentrics among the chromosome rearrangements produced. When ATP was applied before K-32 or simultaneously with it, the number of chromatid dicentrics increased up to 27.1%. Application of ATP after K-32 did not alter the number of chromatid dicentrics significantly vs. that observed on treatment with K-32 alone. The results obtained indicated that addition of ATD by reason of the supplementary energy contributed by this compound modified the mutation process induced by the alkylating chemical mutagen K-32 and endowed the chromosome fragments with a capacity for fusion which was otherwise lacking. The mutation process thus became similar to that occurring in cells of Vicia faba and human cells in vivo and in vitro in natural mutation and under the action of mutagenic factors. By using ATP, the type of mutation could be changed and a differential control over the induced mutation process exercised. Orig. art. has: 1 table. [JPRS: 36,932]

SUB CODE: 06 / SUBM DATE: 18Sep65 / ORIG REF: 008 / OTH REF: 009

Card 1/1 mc

DUBININ, N. S.

"The Pharmacology of Some Species of Erysimum Growing in the Kirgiz SSR." Cand Biol Sci, All-Union Sci-Res Chemical-Pharmaceutical Inst, Frunze, 1953. (RZhBiol, No 2, Sep 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

DUBININ, N.S.

Quality of medical preparations produced in some city drugstores of Kazakhstan. Zdrav.Kazakh. 17 no.12:56-58 '57.
(MIRA 12:6)

1. Iz kafedry tekhnologii lekarstvennykh form Kazakhskogo gosudarstvennogo meditsinskogo instituta.
(KAZAKHSTAN--PHARMACY)

VANDYSHEVA, V.I.; DUBININ, N.S.

Growth and development of Digitalis species cultivated in the Botanical Garden. Izv. AN Kir.SSR.Ser.biol.nauk 5 no.4: 93-102 '63. (MIRA 17:4)

DUBININ, N.S.

Pathological changes in internal organs of cats following poisoning by Erysimum. Trudy Inst. fiziol. AN Kazakh. SSR 7:83-87 '64.
(MIRA 18:6)

TRAVEN', F., inzh.-lesovod;DUBININ, P., inzh.-lesovod

Reliable protection against sirocco-like winds. Nauka i pered. op.v sel'khoz. 9 no.8:28-30 Ag '59. (MIRA 12:12)
(Windbreaks, shelterbelts, etc.)

DUBININ, P. A.

20862. Dibinin, P. A. Solektsiya saknarnoy svekly na biyskoy stantsti. Sbornvk nauch. Rabot (Vsesoyuz. nauch. -issled. in-T sakhar. svekly.) Kiyev --Khar'kov, 1948, s. 115-20.

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949.

SKRIPKO, G.F.; FOL'DMAN, A.B.; DUBININ, P.G.; TEOYAN, A.V.

Cutting germanium and silicon with disks having internal cutting edges. Mashinostroitel' no.1(:31-32 0 '64.

(MIRA 17:11)

KUROCHKIN, [illegible], inzh.; POTAPOV, A.I., tekhnik; DUBININ, P.I., teknik

Watering headings in open pits. Bezop. truda v prom. 4 no.4:28 Ap '60.
(MIRA 13:9)
(Krivoy Rog Basin--Mining engineering--Safety measures)

DUBININ, P.S

TRAVEN', F. I., DUBININ, P. S.

Oak

Growing oak in steppes under protection of snow screens of fast growing tree varieties. Les i step' no. 4, 1952

Monthly List of Russian Accessions, Library of Congress, August 1952, UNCLASSIFIED.

K-4

USSR / Forestry. Forest Crops

Abs Jour: Ref Zhur-Biol., No 13, 1958, 58416

Author : Traven', F. I., Dubinin, P. S.

Inst : Stavropol Scientific Research Inst. for Agriculture

Title : An Experiment in Growing Forest Belts in Kolkhozes of Stavropol'skaya Oblast.

Orig Pub: Zemledeliye, 1957, No 10, 60-66

Abstract: The reasons for the low efficiency of plantings recently made by kolkhozes (1956) are analyzed on the basis of data supplied by the inventory of forest belts. It is indicated that oak was stifled by second-rate genera in many cases; common ash and black locust were not viable on chestnut soils. Forest bands under arid conditions and

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USSR / Forestry. Forest Crops K-4

Abs Jour: Ref Zhur-Biol., No 13, 1958, 58416

without oak as a principal genus showed themselves biologically unstable and not durable. In order to avoid oak stifling by fast-growing genera, it is recommended that the oak (in combination with the fast-growing genera) not be cultivated in single rows but in more powerful bio-groups (by strips with 2-4 rows of hole line planting, placing sufficiently wide distances between the rows). This would permit a mechanized handling, and would guarantee the supremacy of oak without having to maintain its clearing (the experiment of the Stavropol scientific research agricultural institue is described). The experience of the Elistinskiy leskhoz showed also that an ample growth of young oaks is noticed in sowings in split furrows, prepared in the fall on black fal-

Card 2/3

USSR / Forestry. Forest Crops K-4

Abs Jour: Ref Zhur-Biol., No 13, 1958, 58416

low. It is suggested that one introduce fruit-berry genera (enumerated) instead of narrow-leafed oleaster in the outer belt rows. --I. A. Bashkirov

Card 3/3

TRAVEN', Fedor Ivanovich; DUBININ, Petr Stepanovich; KRYLOVA, V.I., red.; PROKOF'YEVA, L.N., tekhn. red.

[Shelterbelt afforestation] Vyrashchivanie zashchitnykh lesonasazhdenii. Moskva, Gos. izd-vo sel'khoz. lit-ry, zhurnalov i plakatov, 1961. 191 p. (MIRA 14:8)
(Windbreaks, shelterbelts, etc.)

K

COUNTRY : USSR
CATEGORY : Forestry. Forest Cultures.

ABS. JOUR. : RZhBiol., No. 4. 1959, No. 19505

AUTHOR : Traven', F.I.; Dubinin, P.S.
INST. : --
TITLE : Rapidly Growing Varieties of the Oak Cultivated in Forest Tracts.

ORIG. PUB. : Lesn. kh-vo, 1958, No.4, 26-32

ABSTRACT : For the conditions necessary in the successful cultivation of oak forest plantations there was a group distribution of the latter as the principal species on steppe soils on forest cultural surfaces. It is suggested that the oaks be placed by bands of 2 - 4 rows of line-hole sowings. This method retains the beneficial effects of energetic biogroups and guarantees the necessary supremacy of the oak in the plantations with hardly any expen-

CARD: 1/2

CATEGORY :

ABS. JOUR. : RZhBiol., No. 4, 1959, No. 15805

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : [illegible] of labor for [illegible]. It is proposed that each [illegible] work out model recommendations of species [illegible] for line sowings in conjunction with [illegible] varieties [illegible] for [illegible] undergrowth. As an example, there are [illegible] of forest belts of [illegible] and 11-rows.
-- Ye. N. Sobin

CARD: 2/2

GUSEV, Nikolay Nikolayevich; KITAYEV, Ivan Georgiyevich; YURRE, Nil Andreyevich[deceased]; MOLCHANOV, A.A., retsenzent; TIMOFEYEV, V.P., retsenzent; DUBININ, P.S., red.

[Forestry] Lesovodstvo. Moskva, Lesnaia promyshlennost', 1965. 246 p. (MIRA 18:12)

ZARUDNYY, L.B., kand.tekhn.nauk; DUBININ, S.S., inzh.; NESIOLOVSKIY, R.S., inzh.

Complete mechanization of the heating process in a layer burning of fuel. Trudy MIKHM vol.16:103-119 '58. (MIRA 14:7)
(Heat engineering) (Boilers)

DUBININ, V., mekhanizator; PUZEY, Ye., mekhanizator; FAUSTOV, N., mekhanizator; SHUTENKO, N., mekhanizator; KOGAY, K. mekhanizator; ISABEKOV, I., mekhanizator.

Doing more today means having more tomorrow. Sov. profsoiuzy 18 no. 11:13-14 Je '62. (MIRA 15:6)

1. Sovkhoz "Cheklarskiy", TSelinnogo kraya (for Dubinin). 2. Sovkhoz "Minskiy" TSelinnogo kraya (for Puzey). 3. Sovkhoz "Khar'kovskiy" TSelinnogo kraya (for Faustov). 4. Sovkhoz "Smirnovskiy" TSelinnogo kraya (for Shutenko). 5. Sovkhoz "Bozaygirskiy" Tselinnogo kraya (for Kogay, Isabekov).
(Virgin Territory—Tractors—Repairing) (Socialist competition)

ZAMSKIY, V. L.; KHOMYLEV, V. S.; DUBININ, V. A.

Reducing the silk winding density in the BP-12 bobbin winding machines. Khim. volok. no.6:52-53 '62. (MIRA 16:1)

(Winding machines)

DUBININ, V.A.; NICHKOV, I.F.; RASPOPIN, S.P.

Anodic dissolution of zinc in alkali metal chloride melts.
Izv. vys. ucheb. zav.; tsvet. met. 8 no.4:58-61 '65.
(MIRA 18:9)

1. Fiziko-tekhnicheskiy fakul'tet Ural'skogo politekhnicheskogo instituta.

DUBININ, V.B.

Deceased

1913 1955

Zoology

See IIC

KUZNETSOV, Vladimir Vasil'yevich; DURININ, V.B., otv.red.; VEL'YATAGO, N.A., red.izd-va; ZENDEL', R.Ye., tekhn.red.

[The White Sea and biological characteristics of its flora and fauna] Belce more i biologicheskie osobennosti ego flory i fauny. Moskva, Izd-vo Akad.nauk SSSR, 1960. 322 p. (MIRA 14:2)

(White Sea--Marine biology)

DUBININ, V.B.

Parasitological studies in the Astrakhan Preserve. Trudy Astr. zap. no.5:286-295 '61. (MIRA 16:8)
(Astrakhan Preserve--Parasitological research)

DUBININ, V.B. [deceased]; KUROCHKIN, Yu.V.

Bibliographic index of works on parasitology of the Volga Delta.
Trudy Astr. zap. no.5:370-388 '61. (MIRA 16:8)
(Bibliography--Volga Delta--Parasitology)
(Volga Delta--Parasitology--Bibliography)

DUBININ, V. D.

"A Pulmonary-Cardiac Apparatus for Certain Pathological Processes in the Lungs and Pleura." Dr Med Sci, Ryazan' Medical Inst imeni I. P. Pavlov, Ryazan, 1953. (KL, No 12, Mar 55)

SO: Sum. No. 670, 29 Sep 55--Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

DUBININ, V.D.

Pneumonia caused by aspiration of gasoline into the lungs. Sov. med. 19 no.6:61-62 Je '55. (MLRA 8:9)

1. Iz kafedry gospital'noy terapii (zav.-prof. M.E. Vasilevskiy) Yaroslavskogo meditsinskogo instituta.
(PNEUMONIA, LOBAR, etiology and pathogenesis, aspiration of gasoline)
(PETROLEUM PRODUCTS, injurious effects- gasoline causing aspiration penumonia)

DUBININ, V.D.

Possibility of a simple method for determining the degree of narrowing in mitral stenosis. Grud. khir. 3 no.2:25-30 '61. (MIRA 14:4)
(MITRAL VALVE--DISEASES

ACC NR: AP7000350 (N) SOURCE CODE: UR/0413/66/000/022/0124/0125

AUTHOR: Gof, V. P.; Drachenin, Yq. A.; Dubinin, V. F.; Shmelev, I. M.

ORG: none

TITLE: A sensor for measuring the direction and velocity of flow. Class 42, No. 188765 [announced by the Central Industrial-Engineering Enterprise (TSentral'noye proizvodstvenno-tekhnicheskoye predpriyatiye TSENTROENERGOMETALLURGPROM])

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 22, 1966, 124-125

TOPIC TAGS: flow measurement, flow rate, flow analysis, electric measuring instrument, flow velocity, measuring instrument

ABSTRACT: An Author Certificate has been issued for a sensor to measure flow direction and velocity, consisting of a pickup in the form of a directionally controlled duct with two thermoelements. A potentiometric measuring instrument, electrically connected with a light and audio signaling system, is connected to the circuit of

Card 1/2 UDC: 532.57.082.6

ACC NR: AP7000358

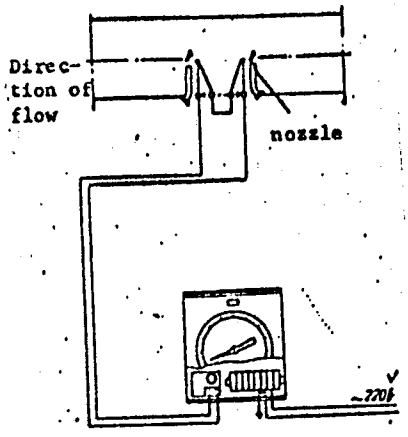

Fig. 1. Direction and velocity flow sensor.

the thermoelements (see Fig. 1). To increase its measuring accuracy by increasing the temperature drop at low speeds and high or low flow temperatures, the sensor is equipped with two nozzles for the continuous feeding of a stabilized stream of gas or liquid, which changes the temperature of one of the thermoelements. Orig. art. has: 1 figure.

SUB CODE: 14, 20/ SUBM DATE: 19Aug65/ ATD PRESS: 5108

Card 2/2

DUBININ, V. G., PROKHOROV, A. M., TRAPEZNIKOV, Z. A., and ANTONOV-ROMANOVSKIY, V. W.

Detection of Ionization of Eu^{++} in the Phosphor SrS-Eu, Sm By the Paramagnetic Resonance Absorption Method

V. V. Antonov-Romanovsky, V. G. Dubinin, A. M. Prokhorov, Z. A. Trapeznikova, and M. V. Fock, P. N. Lebedev Physical Institute, Academy of Sciences of the U.S.S.R., Moscow, U.S.S.R.

When the phosphor SrS-Eu, Sm is under excitation, the paramagnetic absorption caused by Eu^{++} ions decreases appreciably (approximately to 15%). Decrease of the amount of Eu^{+} during excitation may depend either on electron trapping by Eu^{++} ion or on its further ionization, i.e., on its transition to a trivalent state. The second alternative seems to be the most probable.

Report presented at the 117th Meeting of the Electrochemical Society, Chicago, 1-5 May 1960.

[redacted]
V. V.

"Detection of ionization of Eu^{++} in the phosphor SvS-Eu, Sm by the paramagnetic resonance absorption method."

report submitted to The Electrochemical Society, 117th Meeting - Chicago, Ill., 1-5 May 60, Symposium on Luminescence.

Physics Institute im. P. N. Lebedev, USSR Academy of Sciences.

S/051/60/009/003/014/019/XX
E201/E191

24.3500

AUTHORS: Dubinin, V.G., and Trapeznikova, Z.A.

TITLE: A Paramagnetic Electron Resonance Study of the Activator-Valence Changes on Excitation of SrS:Eu:Sm Phosphors

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, No 3, pp 360-364

TEXT: One of the ulresolved problems in luminescence is the question of direct ionisation of activators during excitation of a phosphor, with subsequent de-ionization during natural or forced decay. To tackle this question it is necessary to know the valence state of an activator. Paramagnetic resonance absorption is a reliable method of obtaining the valence state. This method was used to study Eu^{2+} ions in SrS:Eu:Sm, SrS:Eu:Sm($SrCl_2$), and SrS:Eu:Sm(LiF) phosphors which were first completely de-excited and then illuminated with light in the absorption region of Eu^{2+}. The paramagnetic absorption lines of Eu^{2+} were reduced by 12-16% in intensity on excitation with light in the Eu^{2+} absorption region. Assuming that the reduction in paramagnetic resonance absorption is directly proportional to a fall in the number of Eu^{2+} ions, it

S/051/60/009/003/014/019/XX
E201/E191

A Paramagnetic Electron Resonance Study of the Activator-Valence Changes on Excitation of SrS:Eu:Sm Phosphors

was concluded that the ionisation process $Eu^{2+} \rightarrow Eu^{3+}$ occurs to the extent of 12-16%. This conclusion was confirmed by a fall in the optical absorption coefficient (deduced from measurements of the diffuse reflection coefficient) on excitation, which indicated a decrease in the number of non-ionised activator centres. A third proof of the $Eu^{2+} \rightarrow Eu^{3+}$ process in 12-16% of Eu^{2+} ions came from measurement of the absolute number of quanta emitted by the phosphors on illumination with infrared rays.
There are 1 figure and 10 references: 6 Soviet and 4 English.

SUBMITTED: January 14, 1960

Card 2/2

83916

S/051/60/009/004/009/034
E201/E191

26.2264

AUTHORS: Dubinin, V.G., and Trapeznikova, Z.A.

TITLE: Use of Electron Paramagnetic Resonance in a Study of SrS Phosphors Activated with Eu

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, No 4, pp 472-477

TEXT: Paramagnetic resonance makes it possible to determine directly the light sum stored by a phosphor (Refs 1-3). The value of the stored light sum was found from the change in paramagnetic resonance absorption on excitation of SrS:Eu:Sm phosphors. The energy given off as radiation was found from the absolute number of quanta emitted when the phosphors were subjected to infrared light; the quanta were measured with a photomultiplier ЭУ-32 (FEU-32), calibrated in energy units. Comparison of the stored and emitted light sums gave the proportion of the stored energy lost by quenching processes occurring in the phosphor after ionization of the activators. Some of the SrS:Eu:Sm phosphors were prepared with a LiF flux, others without such a flux. The amounts of the activators were kept the same in both groups of phosphors. The change in paramagnetic absorption of Eu^{2+} on excitation showed that this activator was ionized to the same extent (13-16%) in both

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E201/E191

Use of Electron Paramagnetic Resonance in a Study of SrS Phosphors Activated with Eu

groups of phosphors. It was found that in the phosphors without the flux only about one half of the recombination acts produced radiation, while in the phosphors with the flux practically all recombinations were accompanied by emission of radiation (Table 1). It was suggested that the SrS:Eu:Sm phosphors contained centres of various types, some of which emitted light quanta on recombination and others transferred their recombination energy to the lattice in the form of heat. Introduction of the LiF flux altered the ratio of the numbers of these two types of centres, increasing the amount of centres emitting light quanta on recombination. It was also found that the phosphors without the flux lost their stored light sum more rapidly with time (a figure on p 476 shows this quite clearly). This indicates that in the phosphors without the flux more electrons were stored at shallow levels where their lifetimes were considerably shorter than in deep levels. Consequently the stored light sum decreased more rapidly with time in the phosphors without the flux.

Acknowledgements are made to V.V. Antonov-Romanovskiy and M.V. Fok for their advice.

Card 2/3

83916

S/051/60/009/004/009/034
E201/E191

Use of Electron Paramagnetic Resonance in a Study of SrS Phosphors Activated with Eu

There are 1 figure, 3 tables and 5 references: 4 Soviet and 1 English.

SUBMITTED: February 11, 1960

Card 3/3

S/051/60/009/004/025/034
E201/E191

AUTHOR: Dubinin, V.G.

TITLE: A Paramagnetic-Resonance Study of the Effect of Flux on the State of an Activator in a Phosphor

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, No 4, pp 531-533

TEXT: The author studied SrS:Eu:Sm phosphors prepared with and without a flux. LiF or $SrCl_2$ were used as the fluxes. The activator concentrations were the same in all phosphors. The phosphors were studied using a paramagnetic-absorption technique described earlier (Ref 2). Paramagnetic absorption by Eu^{2+} was 1.5 times greater in the phosphors with LiF or $SrCl_2$ than in the phosphors without a flux. This showed that the concentration of Eu^{2+} was 30-40% greater in the phosphors with a flux than in the phosphors without a flux (although the amount of Eu introduced initially was the same in all phosphors). Assuming that Eu is non-volatile, it was found that the phosphors with a flux contained 90-100% Eu in the Eu^{2+} state. The phosphors without a flux had only 60% Eu in the Eu^{2+} state; it was not clear what was the state of the remainder of Eu (40%).

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S/051/60/009/004/025/034
E201/E191

A Paramagnetic-Resonance Study of the Effect of Flux on the State of an Activator in a Phosphor

The absence of a direct effect of a flux on Eu centres (checked by paramagnetic-resonance measurements) suggested that Eu^{2+} was in the $^8S_{7/2}$ state, which is characterised by weak binding with the matrix lattice. The fluxes affected indirectly the activator concentration, the phosphorescence spectra, luminescence during excitation, and the light sums emitted on de-excitation (cf. a table on p 532). Acknowledgements are made to V.V. Antonov-Romanovskiy and M.V. Fok, who directed this work, to V.L. Levshin for his advice, to A.A. Manenkov for carrying out some of the measurements, and to R.M. Medvedeva for preparation of the phosphors.
There are 1 table and 7 references: 2 Soviet and 5 English.

SUBMITTED: April 1, 1960

Card 2/2

DUBININ, V.G., Cand Phys-Math Sci, "Investigation of centers of luminescence and kinetics of luminosity of certain alkali-earth phosphors by the method of electronic paramagnetic resonance." Moscow, 1961. (Acad Sci USSR, Phys Inst im P. N. Lebedev). (KL, 3-61, 203).

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AUTHORS: Antonov-Romanovskiy, V. V. and Dubinin, V. G.

TITLE: Study of phosphors activated with rare earths on SrS basis with electron paramagnetic resonance

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 4, 1961, 481-482

TEXT: The present paper has been read at the 9th Conference on Luminescence (Crystal Phosphors), Kiyev, June 20-25, 1960. In an earlier work (Ref. 1: Antonov-Romanovskiy et al., Zh. eksperim. i teor. fiz., 11, 1466 (1959)) the authors had used electron paramagnetic absorption to study the state of the activator. A reduction of the paramagnetic absorption of Eu^{2+} was established in the SrS-Eu,Sm phosphor on its excitation in the optical absorption band of Eu^{2+}. The diminution of paramagnetic absorption was about 15 %, which fits the decrease of the natural absorption coefficient of Eu^{2+}. In parallel thereto, the authors measured the absolute quantum numbers emitted by the excited phosphor, from which, in turn, they obtained the data regarding the change of paramagnetic absorption. These

Card 1/3

Study of phosphors...

data permit the assumption of an ionization ($Eu^{2+} \longrightarrow Eu^{3+}$) of the activator arising by the excitation of this phosphor. The effect of the flux upon the Eu concentration in the phosphor was also determined by the above-mentioned methods. Phosphor specimens with equal Eu contents in the mixtures, but partly with LiF or $SrCl_2$ as fluxes, and partly without fluxes, were examined for this purpose. Phosphors with flux were found to have a paramagnetic absorption of Eu^{2+} greater by 1.5 times than such without flux. This permits assuming that the activator concentration is by 30-40 % larger in phosphors with flux than in such without. Since all rare earth elements enter the SrS lattice as trivalent activators (exclusively Eu^{2+}), the effect of fluxes upon the trivalent activators is of interest. On phosphors SrS-Eu,Gd with and without LiF flux it has been possible to prove that the flux causes the activator concentration to grow by three times in the case of Eu, and 20 times in the case of Gd. In the SrS-Gd phosphor, the concentration of the Gd activator was found to increase by 10 times when LiF flux was added. It is assumed that the principle of charge compensation must be satisfied for the introduction of Gd^{3+} ion into the lattice. It has been further established that in the SrS-Eu,Sm phosphor only half the stored energy is liberated in the form of light on de-excita-

tion. The other half is converted into heat by recombination. In the ensuing discussion, V. V. Antonov-Romanovskiy states that the method of paramagnetic absorption is an efficient method for phosphor investigation. The principal result of the present work is said to be the detection of the $Eu^{2+} \longrightarrow Eu^{3+}$ transition. Ye. B. Aleksandrov reported on tests made on $CaSO_4$-Mn luminophore, in which it was possible to prove the occurrence of systematic modifications of Mn^{2+} absorption lines with de-excitation. It is believed that the major part of Mn in this phosphor plays no role in light accumulation. There is 1 Soviet-bloc reference.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P. N. Lebedev, Academy of Sciences USSR)

ACC NR: AP6032447 SOURCE CODE: UR/0368/66/005/003/0344/0348

AUTHOR: Koroleva, M. Ya.; Dubinin, V. G.

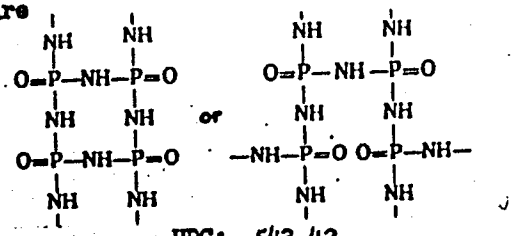
ORG: none

TITLE: Infrared spectroscopic study of orthophosphoric triamide and products of its thermal degradation

SOURCE: Zhurnal prikladnoy spektroskopii, v. 5, no. 3, 1966, 344-348

TOPIC TAGS: thermal decomposition, infrared spectrum, inorganic amide

ABSTRACT: Orthophosphoric triamide $OP(NH_2)_3$ (in the form of a suspension in vaseline oil) was heat-treated in dry air at temperatures of 50, 100, 150, 200, 250, 300, 400, 500, 600, 700 and 800°C for 2 hr, and IR spectra of the thermal decomposition products (TDP) were taken. The various absorption bands obtained are interpreted structurally. The spectra show that a polycondensation of P-NH-P takes place slowly up to 100°C, forming a polymer of the structure



Card 1/2 UDC: 543.42

ACC NR: AP6032447

The spectra of further TDP (400-800°C) show that the polycondensation proceeds with the splitting off of NH_3. The polymer structure then becomes a space network in which each nitrogen atom is linked to three phosphorus atoms. It is concluded that the polymerized products resulting from the thermal degradation of $OP(NH_2)_3$ have various degrees of polymerization and various structures. Authors thank V. V. Illarionov for his interest and useful discussion, and also Ye. G. Pogodilova for kindly supplying the preparations. Orig. art. has: 1 figure and 1 table.

SUB CODE: 07/ SUBM DATE: 13Apr65/ ORIG REF: 003/ OTH REF: 015

Card 2/2

ASTAKHOV, Aleksey Illarionovich; DEGTYAREV, Aleksey Petrovich, inzh.; DUBININ, V.I.; REYSH, A.K.; SHEVCHENKO, I.S.; TABUNINA, M.A., red.izd-va; GOL'BERG, T.M., tekhn. red.

[Excavator works] Ekskavatornye raboty. Pod red. A.P. Degtiareva. Moskva, Gosstroiizdat, 1962. 363 p. (MIRA 16:5)

(Excavating machinery)

ALEKSANDROV, A.P.; GENKIN, G.M.; GUREVICH, G.L.; DUBININ, V.I.

Establishment of ferrite magnetization precession at high power levels. Fiz. tver. tela 5 no.10:2766-2770 O 63. (MIRA 16:11)

1. Radiofizicheskiy institut Gor'kovskogo gosudarstvennogo universiteta.

KERSHENBAUM, Ya.M.; DUBININ, V.M.

Self-propelled hydraulic drive boring machine for exploratory drilling. Trudy MNI no.16:168-175 '56. (MLRA 9:10)

(Boring machinery)

DUBININ, V.M., inzh.; KOZHEMYAKIN, N.A., inzh.; KUMEKHOV, B.S., inzh.; NARYSHKIN, A.P., inzh.; TARASOV, M.V., inzh.; YASAFOV, A.F., inzh.

Tyrnyauz ore dressing plant. Gor. zhur. no.9:10-11 S '65.
(MIRA 18:9)

DUBININ, Vladimir Mikhaylovich; BARANOV, A.Ya., red.

[Organization of the tire shop in an automotive transportation unit; work practice of the Sverdlovsk Automotive Transportation Unit no.1211] Organizatsiia shinnogo tsekha v avtokhoziaistve; iz opyta raboty Sverdlovskoi avtokolonny No.1211. Moskva, Transport, 1965. 90 p. (MIRA 18:1)

DUBININ, V.M.; POLUPANOV, P.A.; YASAFOV, A.F.

Practices for recovering oxidized molybdenum from Tyrnyauz ore.
TSvet. met. 38 no.9:12-17 S '65.
(MIRA 18:12)

DUBININA, V.N.; KORNILOVICH, I.A.; SOKOLOVA, Ye.P.

Pyromorphite and other exogenetic minerals of the apatite group in the complex metal deposits of eastern Transbaikalia. Trudy VSEGEI 96:137-149 '63. (MIRA 17:9)

DUBININ, V.N. [Dubinin, V.M.]; KORDYUK, S.L.; LISICHENKO, V.I. [Lysychenko, V.I.]; SMOYLOVSKIY, A.N. [Smoilovs'kyi, O.N.]

Temperature dependence of the Mössbauer effect in stannic acid. Ukr.fiz.zhur. 10 no.12:1368-1369 D '65. (MIRA 19:1)

1. Dnepropetrovskiy gosudarstvennyy universitet.

S/198/61/007/002/004/004
D204/D303

AUTHOR: Dubinin, V.P.,

TITLE: Scientific conference on high temperature strength

PERIODICAL: Prykladna mekhanika, v.7, no.2, 1961, 228-229

TEXT: This article is a summary of the conference held from June 21 to 23, 1960. The titles of lectures given are as follows: H.S. Pysarenko (IMSS AS UkrSSR) "Research on high temperature strength at the Instytut metalokeramiky (Institute of Metallic Ceramics)" AS Ukr SSR. ; V.M. Rudenko, "Research on static strength of temperature-proof materials obtained with methods of powder metallurgy"; O.F. Timoshenko, V.I. Kovpak " Research on static strength of temperature-proof materials with programmed changes of load and temperature" ; O.F. Tereschenko "Research on the influence of the heating regime on the strength characteristics of brittle materials with different kinds of load" ; V. Ya. Kelekhsayev "Use of metallic powders for obtaining bimetallic sheets and for raising

Card 1/5

Scientific conference on . . . .

the level of constructive strength of steel" ; I.A. Oding and L. K. Hordiyenko "Study of structural changes in metals and alloys at high temperature creep according to the change of their electric conductivity level" ; M.M. Sklyarov " Testing of temperature proof alloys for short-period (one second) creep" ; V.P. Dubinin "Research on influence of constructive factors on durable strength of some temperature proof materials for turbine blades"; I.A. Kozlov and I.V. Lebedov " Some problems of experimental research on the carrying strength of discs, taking temperature into account"; V.H. Timoshenko " String strain-gauge for measuring deformations at high temperature"; V.T. Troschchenko " Durability of temperature proof metallic ceramics at non-stationary regime of cyclic loads and temperature"; M.I. Chayevskiy " Strength of steel which is in contact with melted eutectics Pb-Sn and Pb-Bi"; V.O. Kuz'-menko "Research on elastic constants of temperature proof materials at high temperatures"; V T. Troshchenko B.O. Gryaznov and L.A. Kaplyns'kyy " Influence of static stretching on durability of 1X13

Card 2/ 5

S/198/61/007/002/004/004
D204/D303

Scientific conference on . . .

steel"; M.I. Chernyak " Influence of plastic pre-deformation on durability of temperature proof alloys"; B.O. Gryaznov "Research on durability of temperature proof materials in complicated stress state at high temperatures"; V.T. Troshchenko "Research on durability of tongues of turbine blades in complicated stress state at high temperatures"; I.O. Troyan "Research on influence of load frequency on durability of temperature proof alloys at high temperatures"; I.G. Frydlender, D.M. Peterherya " Research on influence of electrochemical polishing on durability and durable strength of EI 473B alloy at high temperatures"; M.Ya. Leonov, and Ya. S. Pidstryhach " On differential equations of thermal diffusion in solids"; M.M. Sklyarov "On a rational method of testing of temperature proof alloys for thermal stability"; M.V. Novikov " Research on damping properties of temperature proof materials at high temperatures" ; Ye. M. German " Influence of temperature changes on strength of metalloceramic alloys" ; M.S. Mozharovskiy " Research on thermal fatigue of temperature proof materials"; M.S.Mozharovskiy

Card 3/5

S/198/61/007/002/004/004
D204/D303

Scientific conference on . . .

"Re-search of thermal fatigue of temperature proof materials"; I.M. Fedorchenko, N.O. Filatova " Investigation of mechanical properties of iron carbide at high temperatures"; H.M. Tretyachenko, L.V. Kravchuk " Methods of testing of brittle materials for thermal shock " ; H. M. Tretyachenko, L.V. Kravchuk " Investigation of stressed state and failure of machine parts made of metallic ceramics, at various temperature changes"; V.K. Kuz'menko " Investigation of strength characteristics of some refractory materials at temperatures near 2,0000C "; O.F. Pronkin " Methods of shaping and strength computing on non-uniformly heated discs, taking into account their plasticity and creep with the aid of the ultimate strength method";. It was decided that essential development of research is necessary, above all in the following directions: 1) Development and investigation of strength of new materials capable of working reliably at 2,000 - 3,000°C and above 3,000°C. 2) Investigation of strength of energetic machine parts in conditions

Card 4/5

S/198/61/007/002/004/004
D204/D303

Scientific conference on . . .

on non-stationary loading and temperature. 3) Creation of reliable experimental methods for investigating the strength of materials and actual construction at and above 2,000°C. 4) Development of theoretical methods of estimating the strength of materials and constructions at high temperatures. 5) Wide application of physical methods to research on high temperature strength. 6) Investigation of high temperature strength at large and small test bases.

Card 5/5

DUBININ, V.P., inzh.

Investigating the long-term strength of a nickel-chromium alloy subjected to torsion. Mashinostroenie no.3:108-110 My-Je '62. (MIRA 15:7)

1. Institut metallokeramiki i spetsial'nykh splavov AN USSR.
(Nickel-chromium alloys—Testing)

DUBININ, V.P., inzh.; PISARENKO, G.S., inzh.

Response of EI-437B alloy to stress concentration due to continuous loading. Mashinostroenie no.6:90-92 N-D '62. (MIRA 16:2)

1. Institut metallokeramiki i spetssplavov AN UkrSSR.
(Nickel-chromium-titanium alloys—Testing)

ACCESSION NR: AP4015269 S/0226/64/000/001/0077/0080

AUTHOR: Grigor'yeva, V. V.; Dubinin, V. P.; Sergeyenkova, V. M.; Osasyuk, V. V.

TITLE: Rupture strength of a hard chromium carbide alloy

SOURCE: Poroshkovaya metallurgiya, no. 1, 1964, 77-80

TOPIC TAGS: cermet, cermet rupture strength, chromium carbide alloy, chromium carbide nickel cermet, refractory alloy, refractory cermet, chromium carbide, alloy rupture strength

ABSTRACT: Cermet specimens (Fig. 1 of Enclosure) containing 85% chromium carbide and 15% nickel were compacted from powders and sintered in hydrogen at 1573K, then subjected to stress rupture tests at 1073 and 1173K for 100 hours. Results plotted graphically (Fig. 2 of Enclosure) are compared with data for the heat-resistant alloy ZI437B and indicate a substantial difference in rupture strength of the two materials at 1073K, which decreases as the temperature is increased to 1173K. Orig. art. has: 3 figures and 1 table.

Card 1/4

ACCESSION NR: AP4015269

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Institute for Problems in the Science of Materials AN UkrSSR)

SUBMITTED: 24Sep63 ENCL: 02

SUB CODE: IM NO REF SOV: 001 OTHER: 000

Card 2/4

ACCESSION NR: AP4015269

ENCLOSURE: 01

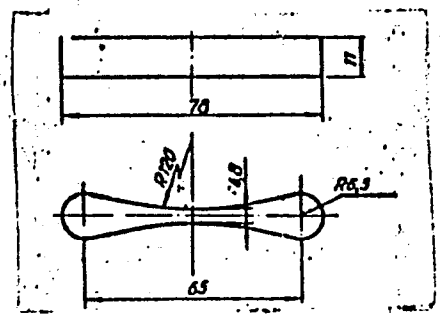


Figure 1. Specimen for stress rupture test.

3/4

ENCLOSURE: 02

ACCESSION NR: AP4015269

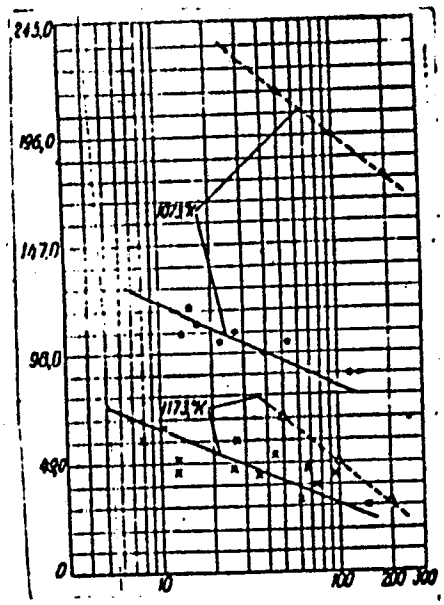


Figure 2. Results of stress rupture tests.

_____chromium carbide alloy

----------heat resistant alloy EI437B

use "stress, mn/m^2" vertically and "time, hours" horizontally

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ACCESSION NR: AP4029204 S/0226/64/000/002/0032/0039

AUTHOR: Boyko, P. A.; Gryaznov, B. A.; Dubinin, V. P.; Klimenko, V. N.; Kuz'menko, V. A.; Osasyuk, V. V.; Radomy*sel'skiy, I. D.; Rudenko, V. N.

TITLE: Investigation of the properties of N32D4 high-alloy nickel-copper powder-metal steel

SOURCE: Poroshkovaya metallurgiya, no. 2, 1964, 32-39

TOPIC TAGS: N32D4 steel, high alloy steel, nickel copper steel, powder metal steel, copper containing alloy, nickel containing alloy

ABSTRACT: The authors investigate subject properties manufactured by two technological variations. It was shown that the higher pressures of the first pressing and temperature of the first sintering raises the density of the manufactured samples only slightly and has little affect on the strength characteristics in static tests. These results are presented in tables and graphs. In dynamic tests (resiliency, ultimate strength) there is a considerable decrease in the strength of the samples manufactured by the second technological variation which is associated with an increased sensitivity of the dynamic strength characteristics of porosity micro-heterogeneity in composition which is higher in the samples subjected to a first

Card 1/2

ACCESSION NR: AP4029204

sintering at low temperature. Orig. art. has: 8 figures and 2 tables.

ASSOCIATION: Institut problem materialovedeniya AN SSSR (Institute of Material Behavior Problems, AN SSSR)

SUBMITTED: 13Sep63 DATE ACQ: 28Apr64 ENCL: 00

SUB CODE: ML NO REF SOV: 005 OTHER: 001

Card 2/2

L 21825-66 EWP(k)/EWT(d)/EWT(m)/EWP(h)/ETC(m)-6/T/EWP(1)/EWP(w)/EWP(v)/EWP(t)

ACC NR: AT6008667 (N) SOURCE CODE: UR/0000/65/000/000/0236/0238

IJP(c) EM/MJW/JD/GS

AUTHORS: Kuriat, R. I. (Kiev); Dubinin, V. P. (Kiev); Tret'yachenko, G. N. (Kiev)

ORG: none

TITLE: The effect of thermal fatigue on the durability of materials

SOURCE: Vsesoyuznoye soveshchaniye po voprosam staticheskoy i dinamicheskoy prochnosti materialov i konstruksionnykh elementov pri vysokikh i nizkikh temperaturakh, 3d. Termoprochnost' materialov i konstruktsionnykh elementov (Thermal strength of materials and construction elements); materialy soveshchaniya, Kiev, Naukova dumka, 1965, 236-238

TOPIC TAGS: thermal stability, cyclic load, high temperature strength, turbine blade, alloy, metallurgic testing machine / IP-4M metallurgic testing machine, EI607A alloy, EI765 alloy, EI827 alloy, ZhS6K alloy

ABSTRACT: The thermal stability of nozzle blades of EI607A, EI765, and EI827 alloys is tested by a method described earlier by G. N. Tret'yachenko, R. I. Kuriat, L. V. Kravchuk (Voprosy vysokotemperaturnoy prochnosti v mashinostroyenii, Izd-vo AN UkrSSR, 1963). The blades of EI607A were tested under conditions of 1173 ⇄ 343K, and the others under conditions of 1273 ⇄ 343K. All blades had a height of 72 mm and a chord of 52 mm. Specimens with a diameter of 5 ± 0.05 mm and an effective length of 25 mm

Card 1/2

L 21825-66

ACC NR: AT6008667

cut from blades were tested for durability with an IP-4M machine, under cyclic loading. Alloy EI765 was found to have the better thermal stability; alloy EI827 was found to have the better durability. Orig. art. has: 1 photograph and 1 table.

SUB CODE: 11/ SUBM DATE: 19Aug65/ ORIG REF: 002

Thermal stress

Card 2/2

L 22990-66 EWT(d)/EWT(m)/EWP(w)/EWP(t)/EWP(n)-2/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(l)
ACC NR: AT6008643 JD/JG/GS(A) SOURCE CODE: UR/0000/65/000/000/0007/0013

AUTHORS: Pisarenko, G. S. (Academician AN UkrSSR) (Kiev); Kharchenko, V. K. (Kiev); Dubinin, V. P. (Kiev); Borisenko, V. A. (Kiev); Kashtalyan, Yu. A. (Kiev)

ORG: none

TITLE: Investigation of mechanical properties of high-melting materials at high temperatures in a vacuum and in an inert medium

SOURCE: Vsesoyuznoye soveshchaniye po voprosam staticheskoy i dinamicheskoy prochnosti materialov i konstruktsionnykh elementov pri vysokikh i nizkikh temperaturakh, 3d. Termoprochnost' materialov i konstruktsionnykh elementov (Thermal strength of materials and construction elements); materialy soveshchaniya. Kiev, Naukova dumka, 1965, 7-13

TOPIC TAGS: tungsten, niobium, elastic modulus, elastic stress, elastic deformation, metallurgic testing machine/ UVT-1 metallurgic testing machine, UVT-2 metallurgic testing machine

ABSTRACT: An experimental testing chamber for testing the mechanical properties of high-melting metals in a vacuum and in an inert medium at high temperatures has been developed (see Fig. 1). The temperature dependence of the modulus of elasticity, strength limit, and hardness limit of tungsten and molybdenum were determined. The experimental results are presented graphically (see Fig. 2). It was found that the strength and hardness limit obeyed the expressions of Frantsevich-Vrontskiy and

Card 1/3

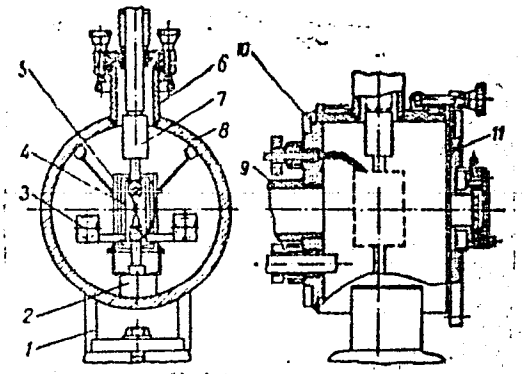

Fig. 1. Working chamber of the installation VTU-2V. 1 - foundation plate; 2 - clamps; 3 - current leads; 4 - specimen; 5 - heating installation; 6 - chamber top; 7 - hinged installation; 8 - body of chamber; 9 - exhaust nozzle; 10 - back cover; 11 - front cover.

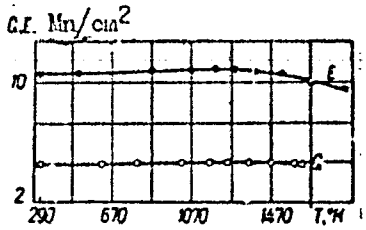

Fig. 2. Dependence of elasticity characteristics of niobium on the temperature. E and G - elastic modulus of the first and second kind respectively.

Ito-Shishokin, shown as $\sigma_n = m_n \sigma_0 e^{-\beta_n T}$, $H = k_n H_0 e^{-\alpha_n T}$,

where T is the temperature in degrees K, σ_0 and H_0 are the values of the strength and hardness limit at 0K, β_n and α_n are the temperature coefficients of the strength

and hardness limit, and m_n and k_n are constants. It is concluded that the maximum in the logarithmic decrement of oscillations in niobium at 570K, first observed by M. G. Losinskiy and A. Ye. Fedorovskiy, is related to the penetration of impurities into the niobium lattice. Orig. art. has: 8 graphs and 3 equations.

SUB CODE: 11/ SUBM DATE: 19Aug65/ ORIG REF: 010/ OTH REF: 001

ACC NR: AT6008659 JD/GS (N) SOURCE CODE: UR/0000/65/000/000/0157/0159

AUTHORS: Gryaznov, B. A. (Kiev); Dubinin, V. P. (Kiev)

ORG: none

TITLE: A study of the fatigue strength of steel EI437B in torsion and at high temperature

SOURCE: Vsesoyuznoye soveshchaniye po voprosam staticheskoy i dinamicheskoy prochnosti materialov i konstruktsionnykh elementov pri vysokikh i nizkikh temperaturakh, 3d. Termoprochnost' materialov i konstruktsionnykh elementov (Thermal strength of materials and construction elements); materialy soveshchaniya. Kiev, Naukova dumka, 1965, 157-159

TOPIC TAGS: metallurgic testing machine, heat resistant material, fatigue strength, heat effect, steel, torsional vibration / UK-1 metallurgic testing machine, EI437B steel

ABSTRACT: Testing device UK-1, developed at the Institute of Problems in Material Behavior, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR), is described. The device was designed for testing heat resistant materials for fatigue strength in conditions of normal and high temperatures and under torsional vibrations. The form of test specimens having a diameter of 6 mm and a length of 50 mm is shown in Fig. 1. Figure 2 is a schematic of the UK-1. The specimen 1 is fastened in the lower clamp 11 by means of the pilot wheel 9. At the upper end of the specimen is a sloping clamp (parts

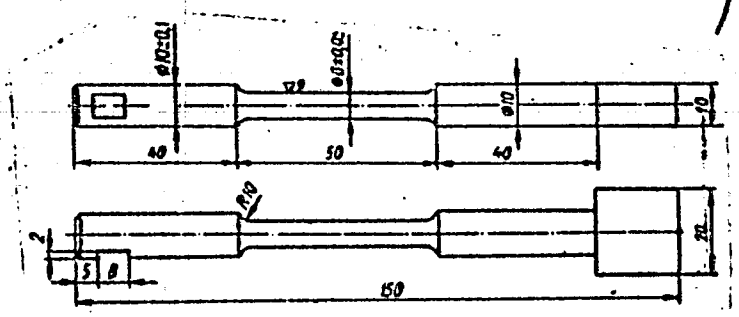

Fig. 1. Specimen for testing machine UK-1.

3 and 4) with extensions 2. At the ends of the extensions are special plates made of low-carbon steel. These plates are acted upon by electromagnets 13, causing a torsional vibration of the system. The electromagnets are served either by a TU-600 booster (amplifier) or by a generator of type 3G-10. The position of the electromagnet is controlled by turning dial 10. An electronic oven 12 is used to heat the specimen. A microscope device 8 serves for measuring torsional strains of the test specimen. An illuminating device 7 is focused on two small screws at 5 soldered to thin wire 6. This arrangement is an aid in measuring deflections. The results of fatigue measurements of EI437B steel are shown in Fig. 3.

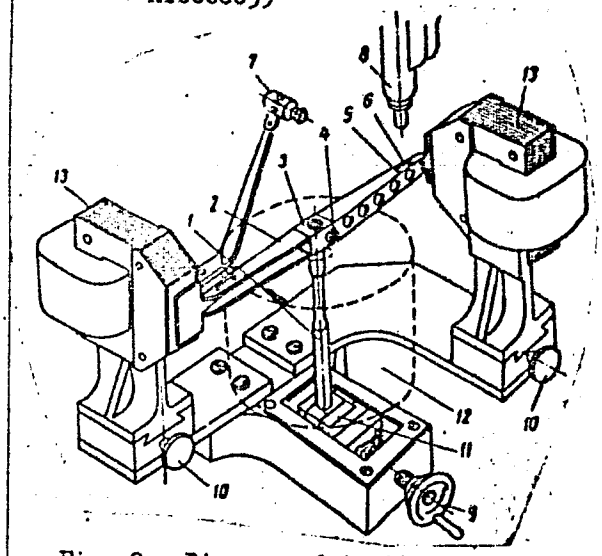

Fig. 2. Diagram of testing machine UK-1.

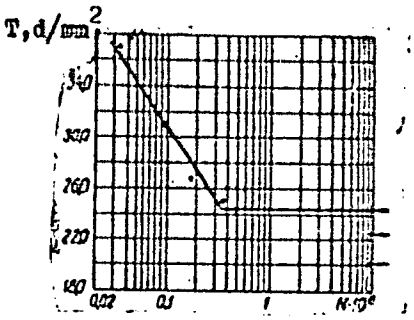

Fig. 3. Fatigue curve for steel EI437B (T = 1023K; r = -0.8).

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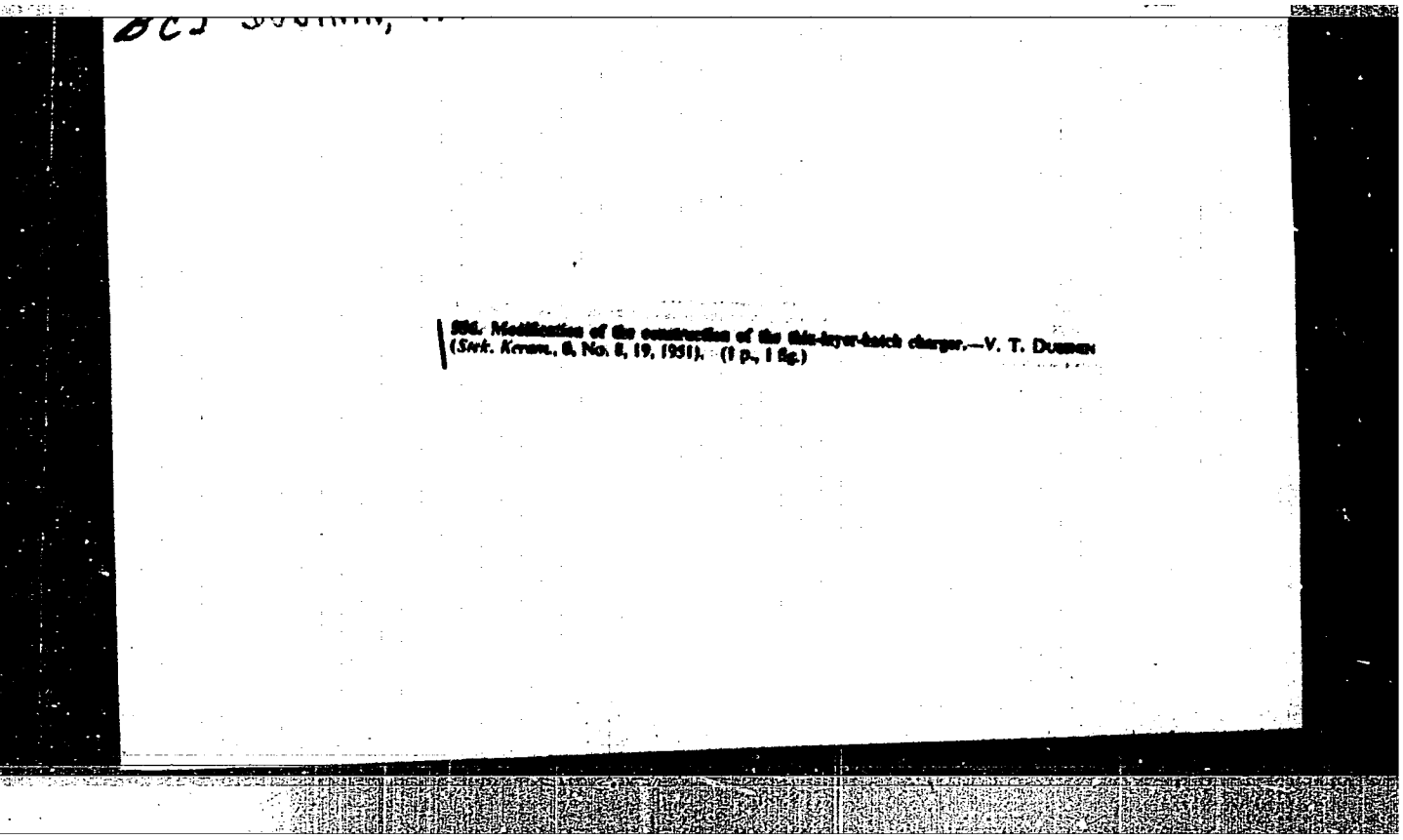

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(*Sark. Keram.*, 8, No. 8, 19, 1951). (1 p., 1 fig.)

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DUBININ, V.T.

1744. Electromagnetic impact device for testing Stalinite glass.—V. T. DUBININ (*Stek. Keram.*, 8, No. 11, 19, [1951]). Stalinite "unbreakable" glass is tested for impact strength and the area of the broken glass section. Previously this test was carried out with a 1·76 lb. ball raised by hand to a height of *c.* 4 ft. and dropped on to the glass. According to the method now recommended the ball is dropped from an electromagnet attached freely to a vertical rod so that its height from the test-piece can be adjusted. (1 fig.)

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(Caissons)

15(2)

AUTHORS: Dubinin, V. T., Obukhov, V. M. SOV/72-59-3-11/19

TITLE: High Working Index Figures of a Glass Melting Furnace (Vysokiye pokazateli raboty steklovarennoy pechi)

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ABSTRACT: The Gusevskoy Glass Factory imeni Dzerzhinskiy produces technical plate glass for motor cars, appliances, mirrors and photographic plates. The requirements placed on it are very high, and therefore special attention is devoted to quality in the mentioned factory. As far as stability of glass quality and the utilization coefficient of the glass mass are concerned, this factory occupies a leading position in the plate glass industry of the Soviet Union. Figures 1 and 2 show the glass melting furnace of the factory. The temperature curve of the furnace may be seen from figure 3. Since 1956 the basin and the channel walls are made of fire clay beams of a large format and high density. Figures 4, 5 and 6 show the nature of destruction undergone by these beams. The basin walls of the tank furnace are intensively cooled by blowing. The furnace worked for 24 months and 10 days without need for repairs, which circumstance led to a high efficiency and to saving in

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repair costs. The furnace temperatures are very conscientiously prepared and maintained, thus permitting standstills to be cut to a minimum. The individual furnace sections are continuously controlled by masons keeping watch. Every month the conditions of all furnace parts are checked by assistants of the chief technician and the results are recorded (Table 1). The deviation in the composition of the raw materials used for a charge in 1958 may be seen from table 2. To secure a stable production, only 8 out of 9 machines are operated at a time. The remaining machine is ready for operation at any event. The glass mass level in the furnace is automatically maintained within an accuracy of $\pm$ 0.25 mm and the furnace pressure within oscillations of a maximum $\pm$ 0.05 mm of the water column. The furnace temperatures are controlled by 18 stationary radiation pyrometers, which are connected to 4 self-recording electronic potentiometers of the EPP-0,9 type (V. M. Obukhov, Ref 1). The radiation pyrometers are controlled once for each shift by means of an optical pyrometer of the OPPIR-0,9 type. Table 3 gives the technical and economic index figures of furnace performance in the last years.

High Working Index Figures of a Glass Melting Furnace SOV/72-59-3-11/19

In conclusion the authors of the present paper state that an extension of the experience made by the mentioned factory to other factories would mean an additional great amount of plate glass for the country. There are 6 figures, 3 tables, and 1 Soviet reference.

ASSOCIATION: Gusevskoy stekol'nyy zavod imeni Dzerzhinskogo (Gusevskoy Glass Factory imeni Dzerzhinskiy)

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