USSR/Miscellaneous - Machining

Card : 1/1

Authors : Livshits, B. I.; Bruk, S. I.; Kerinskaya, F. I.

Title : Increased precision in cam machining

Periodical : Stan. i instr, 3, 9 - 14, Mar 1954

Abstract : The precision of cams made on profiling machines with automatic control is discussed and a detailed analysis of the errors which are intrinsic to such manufacturing is given together with some suggestions as to how cam precision can be improved. Diagrams and formulas.

Institution : ....

Submitted : ....

Livshits, B. I.

USSR/Miscellaneous - Machine control

Card 1/1 Pub. 103 - 14/22

Authors : Kurisis, L. N.; Livshits, B. I.; and Solovyev, V. K.

Title : Devices for the control of cams

Periodical : Stan. i instr. 12, 28-29, Dec 1954

Abstract : The development of devices for continuous industrial-control over cylindrical and disk-type cams (grooved and open), is reported. The devices were designed in the form of lever-mechanical systems with a clock-type indicator. The mode of operation of the new device is described. Drawings; illustrations.

Institution : .....

Submitted : .....

LIVSHITS, B.I.

Combined instruments for measuring and controlling cams. Priboro-stroenie no.6:24-28 Je '56. (MLRA 9:8)
(Cams--Measurement)
(Measuring instruments)

LIVSHITS, B.I.

Precision in manufacturing and assembling cam mechanisms.
Sbor. st. NIILTEKMASH no.3:122-153 '57. (MIRA 12:10)
(Cams)

LIVSHITS, B.I., Cand Tech Sci--(all n) "Process ~~accuracy~~ of manufacture ~~assembly~~ of cam gears." Moscow, 1950. 1 pp (Min of Higher Education USSR. Mos Textile Inst), 150 copies (KL,47-56, 133)

LIVSHITS, B.I.

PHASE I BOOK EXPLOITATION SOV/4438

Vzaimozamenyayemost' i tekhnicheskiye izmereniya v mashinostroyenii; mezhvuzovskiy sbornik, no. 2 (Interchangeability and Engineering Measurements in Machinery Manufacture; University Collection, No. 2) Moscow, Mashgiz, 1960. 542 p. Errata slip inserted. 5,000 copies printed.

Ed.: A.I. Yakushev, Doctor of Technical Sciences, Professor; Editorial Council: A.I. Yakushev (Chairman); B.A. Tayts, Doctor of Technical Sciences, Professor; Ye. I. Vololin, Docent; N.N. Ganchev, Docent; P.N. Goberman, Docent; and O. Ya. Yegor'yev (Scientific Secretary), Engineer; Reviewer: N. Ye. Yegorov, Doctor of Technical Sciences, Professor; Eds.: B.A. Tayts; V.P. Korotkov, Candidate of Technical Sciences, Docent; L.N. Vorontsov, Candidate of Technical Sciences; Managing Ed. for Literature on Machine and Instrument Construction (Mashgiz): N.V. Pokrovskiy, Engineer; Ed. of Publishing House: G.F. Kochetova; Tech. Ed.: T.F. Sokolova.

PURPOSE: This collection of articles is intended for scientific and technical personnel dealing with problems of interchangeability and engineering measurements in the machine and instrument industries.

Card 4/7

VAKSER, David Borisovich; KUDASOV, G.F., kand. tekhn. nauk, red.; LIVSHITS, B.I., kand. tekhn. nauk, retsenzent; MIRKIN, M.S., inzh., red.; BORODULINA, I.A., red. izd-va; NIKOLAYEVA, I.D., tekhn. red.

[Internal grinding] Vnutrennee shlifovanie. Pod obshchei red. G.F. Kudasova. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 64 p. (Bibliotechka shlifovshchika, no.3) (MIRA 14:8)
(Grinding and polishing)

LIVSHITS, B.L., kand. tekhn. nauk; DRUZHINSKIY, I.A., kand. tekhn. nauk, retsenzent; VAKSER, D.B., kand. tekhn. nauk, red.; CHFAS, M.A., red.izd-va; PETERSON, M.M., tekhn. red.; BARDINA, A.A., tekhn. red.

[Technological processes of the manufacture and assembly of cam mechanisms] Tekhnologiia izgotovleniia i sborki kulachkovykh mekhanizmov. Moskva, Mashgiz, 1963. 169 p. (MIRA 16:10)

(Cams) (Metal cutting)

GORSKIY, Nikolay Nikolayevich; DMITRIYEVA, A.A., otv.red.; LIVSHITS, B.Kh., red.; VLADIMIROV, O.G., tekhn.red.

[The energy and mineral wealth of seas in the service of mankind] Energiia i khimicheskie bogatstva morei na sluzhbe u cheloveka. Leningrad, Gidrometeor.izd-vo, 1960. 96 p. (MIRA 13:10)
(Hydroelectric power) (Sea water)
(Tidal power)

LAZARENKO, Nikolay Nikolayevich; PREOBRAZHENSKIY, Yu.V., otv. red. [deceased]; LIVSHITS, B.Kh., red.; FLAUM, M.Ya., tekhn. red.

[Sea level oscillations] Kolebaniia urovnia moria. Leningrad, Gidrometeor. Izd-vo, 1961. 106 p. (MIRA 14:9)
(Oceanography)

POMYTKIN, Boris Aleksandrovich; LIVSHITS, B.Kh., red.; SOLOVEYCHIK, A.A., tekhn. red.

[Baikal's daughter Angara] Doch' Baikala Angara. Leningrad, Gidrometeor. izd-vo, 1961. 113 p. (MIRA 14:8)
(Angara River—Description)

KAROL', Berta Petrovna; LIVSHITS, B.Kh., red.; KRAYNINA, M.I., tekhn. red.

[M.V.Lomonosov and meteorology] M.V.Lomonosov i meteorologiia. Leningrad, Gidrometeor.izd-vo, 1961. 50 p. (MIRA 15:2)
(Lomonosov, Mikhail Vasil'evich, 1711-1765)
(Meteorology)

PROKH, Leonid Zus'yevich; FREYDZON, A.I., otv. red.; LIVSHITS, B.Kh., red.; FLAUM, M.Ya., tekhn. red.

[The angry and the kind winds] Serditye i dobrye vetry. Leningrad, Gidrometeor. izd-vo, 1961. 150 p. (MIRA 15:3)
(Winds)

LEUKHINA, G.N.; SEMENOVA, O.A.; AYZENSHTAT, B.A., otv. red.; LIVSHITS, B.Kh., red.; NIKOLAYEVA, G.S., tekhn. red.

[Tajikistan] Klimaticheskoe opisanie ravnin i predgorii IUzhnogo Tadzhikistana. Leningrad, Gidrometeoizdat, 1963. 82 p. (MIRA 16:8)

(Tajikistan--Climate)

Illumination

S. A.

Sect. B

697

461. **Efficiency of high-temperature-boiling-point heat carriers in industrial power.** B. L. LIVSHITS. *Prom. Energ.*, No. 5, 1-9 (May, 1951) *In Russian.*

Thermal properties of several organic and inorganic heat carrying fluids are revised to show the ranges of their suitability in industrial heating systems operating in temperatures from 200° to 1 300°C.

J. LUKASZEWICZ

LIVSHITS, B. L.

PA 164T24

USSR/Electricity - Thermodynamics. Aug 50
Heaters

"Selection of Optimum Temperatures for High-Boiling Intermediate Heat-Carrying Agents in Industrial Installations," B. L. Livshits, V. O. Fogel', Candidates Tech Sci, Docents, Moscow Inst of Fine Chem Technol imeni Lomonosov

"Prom Energet" No 8, pp 4-9

Gives table of design formulas from which optimum temperatures can be selected for subject agents used for heating and cooling in

164T24

USSR/Electricity - Thermodynamics (Contd) Aug 50

industrial installations. Includes proofs for these formulas which are worked out for both liquid and gas heat-carrying agents.

164T24

VOSKOBOYNIK, David Izrailevich; LUSHKOVTSEV, V.A., redaktor; LIVSHITS, B.L., redaktor; TUMARKINA, N.A., tekhnicheskiy redaktor

[Nuclear energy] Atomnaia energetika. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1956. 168 p. (MLRA 9:12)
(Atomic power)

EINSTEIN, Alfred; INI'ELD, Leopold; SUVOROV, S.G.[translator]; LASHKOVTSEV, V.A., redaktor; LIVSHITS, B.L., redaktor; TUMARKINA, N.A. tekhnicheskiy redaktor

[The evolution of physics; the growth of ideas from early concepts to relativity and quanta. Translated from the English] Evoliutsiia fiziki; razvitie idei ot pervonachal'nykh poniatii do teorii otnositel'nosti i kvant. Perevod s angliiskogo so vstup. stat'ei S.G. Suvorova. Izd. 2-oe. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1956. 279 p. (MLRA 10:4)
(Physics--History) (Relativity (Physics))
(Quantum theory)

LIVSHITS B.L.

ADIROVICH, E.I.; LESHKOVTSEV, V.A., redaktor; LIVSHITS, B.L., redaktor; TUMARKINA, N.A., tekhnicheskiy redaktor

[Some questions on the theory of luminescence of crystals] Nekotorye voprosy teorii liuminestsentsii kristallov. Izd.2-oe. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1956. 350 p. (MLRA 10:3)
(Luminescence) (Crystallography)

LIFSHITS, B.L.

TSESEVICH, Vladimir Platonovich; LESHKOVTSEV, V.A., red.; LIFSHITS, B.L., red.; BRUDNO, K.F., tekhn.red.

[The International Geophysical Year] Mezhdunarodnyi geofizicheskii god. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1957. 135 p. (MIRA 11:2)

(International Geophysical Year, 1957-1958)

LANDSBERG, Grigoriy Samulovich; LIVSHITS, B.L., red.; MURASHOVA, N.Ya., [illegible], red.

[Optics] Optika. Izd. 4-oe, perer. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1957. 759 p. (Obshchii kurs fiziki, vol. 3) (Optics) (MIRA 11:3)

LANDAU, Lev Davydovich; LIFSHITS, Yevgeniy Mikhaylovich; LIVSHITS, B.L., red.; AKHLAMOV, S.N., tekhn.red.

[Theoretical physics] Teoreticheskaia fizika. Vol.1 [Mechanics] Mekhanika. Gos.izd-vo fiziko-matem. lit-ry. 1958. 206 p. (Mechanics) (MIRA 12:1)

GOL'DANSKIY, Vitaliy Iosifovich; KUTSENKO, Andrey Varfolomeyevich; PODGORETSKIY, Mikhail Isaakovich; LIVSHITS, B.L., red.; BRUDNO, K.F., tekhn.red.

[Statistics of readings connected with the registration of nuclear particles] Statistika otschetov pri registratsii iadernykh chastits. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1959. 411 p. (MIRA 12:10)

(Particles, Elementary--Statistics)

LIVSHITS, B.L., kand. tekhn. nauk; FOGEL', V.O., kand. tekhn. nauk

Intensification of the process in heat exchangers heated by means of high-temperature heat-transfer agents. Prom. energ. 14 no.1:34-36 Ja '59. (MIRA 12:1)

1.Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova.
(Heat exchangers)

TSIDIL'KOVSKIY, Isaak Mikhaylovich; LIVSHITS, B.L., red.; BRUDNO, K.F., tekhn.red.

[Thermomagnetic effect in semiconductors] Termomagnitnye iavleniia v poluprovodnikakh. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1960. 396 p. (MIRA 14:1)

(Semiconductors)

LIVSHITS, B.L.

Rapid "refinement of the roots of secular equations" by Maiants' method. Dokl.AN SSSR 132 no.6:1295-1298 Je '60.
(MIRA 13:6)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR. Predstavleno akademikom I.V.Obreimovym.
(Mechanics, Celestial)

S/020/60/133/04/13/031
B019/B060

AUTHOR: Livshits, B. L.

TITLE: A Perturbation Method for an Operator With a Simple Structure

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 4, pp. 800-803

TEXT: By way of introduction the author refers to the circumstance that in the theory of oscillations of multiatomic molecules the task of finding eigenvalues and eigenvectors of the oscillation operator, cannot always be solved by the quantum-mechanical perturbation theory, since the oscillation operator is generally non-Hermitian. Under the assumption of the oscillation operator possessing a simple structure, the author makes use of a perturbation-theoretical method to solve the problem of finding the eigenvalues and eigenvectors of the oscillation operator. With the aid of biorthonormalized column-eigenvectors of the Hermitian conjugations of matrix equations (2) and (10) of the matrices of oscillation operators, he derives the approximate normalization conditions (17). For an n-fold degeneration of eigenvalues the perturbed column-eigenvector is written down (equation

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18) and with its aid the expression (8') is obtained, which is analogous to the column-vector equation (8) for Hermitian operators. Expressions (12a) and (12'a) are obtained by the scalar multiplication of (8') with the column vectors of (10). Finally, the coefficients of (12a) and (12'a) are obtained by a successive approximation. The author thanks Academician I. V. Obreimov for his assistance and interest in the work. There are 2 references: 1 Soviet and 1 US.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR
(Institute of Elemental-organic Compounds of the Academy of Sciences, USSR)

PRESENTED: March 30, 1960, by I. V. Obreimov, Academician

SUBMITTED: March 30, 1960

BAZAROV, Ivan Pavlovich; LIVSHITS, B.L., red.; BRUDNO, K.F., tekhn. red.

[Thermodynamics] Termodinamika. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1961. 292 p. (MIRA 14:7)

1. Fizicheskiy fakul'tet, Kafedra statisticheskoy fiziki Moskovskogo gosudarstvennogo universiteta (for Bazarov)
(Thermodynamics)

AL'TSHULER, Semen Aleksandrovich;KOZYREV, Boris Mikhaylovich; LIVSHITS, B.L., red.; BRUDNO, K.F., tekhn. red.

[Electron paramagnetic resonance] Elektronnyi paramagnitnyi rezonans. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1961. 368 p. (MIRA 14:7)

(Paramagnetic resonance and relaxation)

ARTSIMOVICH, Lev Andreyevich. Prinimal uchastiye SAGDEYEV, R.Z.; LESHKOVTSEV, V.A., red.; LIVSHITS, B.L., red.; BRUDNO, K.F., tekhn. red.

[Controlled thermonuclear reactions] Upravliaemye termoiadernye reaktsii. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1961. 467 p. (MIRA 14:9)

(Thermonuclear reactions)

LIVSHITS, B.L.; FOGEL', V.O.

Relation between the mixers and the heat exchange in a reactor with welded semitubes. Lakokras. mat. i ikh prim. no.5:70-74 '61. (MIRA 15:3)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova.

(Heat exchangers) (Paint machinery)

23424

S/094/61/000/008/002/003
E194/E484

11.3900

AUTHORS: Livshits, B.L., Candidate of Technical Sciences and Fogel', V.O., Candidate of Technical Sciences

TITLE: Liquid ditolylmethane, a new high-temperature heat transfer medium

PERIODICAL: Promyshlennaya energetika, 1961, No.8, pp.23-27

TEXT: High-temperature heat transfer media of current industrial application include mineral oils, glycerine, silicones, diphenyl mixture, molten salts and liquid metals; new types of heat transfer media are being introduced, namely aromatic oils and ditolylmethane. For industrial processes in the temperature range 250 to 300°C, normal mineral oils and glycerine are of inadequate thermal stability, whereas molten salts are only suitable for temperatures above 385°C. None of the existing heat transfer media adequately covers the range 250 to 300°C. New types of fluid being developed for this application in the USSR and abroad include hydrocarbons of the diphenylmethane series which are synthesized in the USSR and aromatic oils such as mobiltherm 600. The hydrocarbon of the diphenylmethane series of the greatest thermal stability is ditolylmethane, the principal

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Liquid ditolylmethane ...

physical characteristics of which are given in Table 2. In order to investigate the problems associated with the application of liquid ditolylmethane, the Moscow Institute of Fine Chemical Technology imeni Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova) made a pilot heat transfer rig. The coil, heated by town gas, has a thermal rating of 10000 kcal/hour. In the tests, cotton seed and castor oil were heated in the kettle to a temperature of 260°C by liquid ditolylmethane at a maximum temperature of 320°C. Design details of the plant used are given. The tests on this equipment lasted 18 months with many starts and stops. The number of hours during which the ditolylmethane reached temperatures up to 320°C was 700 hours. The most important property of high temperature organic heat transfer media is the thermal stability. During the 18 months operation the viscosity of the ditolylmethane rose by 5 - 10% which should correspond to a resin content of 3 - 6%. According to existing rules, a heat transfer medium need be changed only when the resin content is greater than 10%. To check this point the resin content of the ditolylmethane was specially determined and it was found to have

Liquid ditolylmethane ...

risen to just less than 5% whilst the coke number rose from 0 to 0.67%. Thus the thermal stability of ditolylmethane at temperatures up to 320°C was completely satisfactory. The heat transfer rate was adequate with a flow speed of 0.48 m/sec in the coils. The heat transfer coefficient results are in good agreement with data calculated by the usual procedure using the tabulated data given. Ditolylmethane is better than the usual diphenyl mixture in flash point and similar properties. It is accordingly recommended that liquid ditolylmethane should be used for heating and cooling of high temperature industrial heat exchange equipment. There are 3 figures and 2 tables.

Table 2. Thermal and physical properties of liquid ditolylmethane

Legend: 1 - temperature °C; 2 - saturation pressure, atm; 3 - specific gravity of liquid kg/m^3; 4 - true specific heat of liquid, kcal/kg°C; 5 - liquid enthalpy kcal/kg; 6 - thermal conductivity of liquid kcal/m.hr°C; 7 - dynamic viscosity of the liquid x 10^6 kg.sec/m^2; 8 - kinematic viscosity of the liquid x 10^6 m^2/sec. 9 - Prandtl's criterion.

Card 3/4

LIVSHITS, B.L.

Effect of free rotation in molecules on the normal vibration frequencies. Opt. i spektr. 10 no.2:145-151 F '61. (MIRA 14:2)
(Spectrum, Molecular)

LIVSHITS, B.L.; FOGEL', V.O.

Intensifying the heating of reactors when liquid high temperature heat carriers are used. Lakokras.mat.i ikh prim. no.1:74-78 '62. (MIRA 15:4)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.Lomonosova.
(Chemical reactors) (Liquid fuels)

S/020/63/149/002/013/028
B108/B186

AUTHOR: Livshits, B. L.

TITLE: Calculation of the frequencies and shape of the normal molecular vibrations by the method of perturbations

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 2, 1963, 305 - 307

TEXT: The method of perturbations formulated by the author in DAN, 133, 800 (1960), for an operator of simple structure can be used to analyze the normal vibrations of multi-atomic molecules. When the perturbation in the operator of the molecular vibrations cannot be separated out in the natural coordinates this can be done by transforming the base of the system of the natural coordinates taking the strongest interactions into account. The method of perturbations is a quick way of calculating the frequencies and shape of the vibrations of large molecules since the order of the secular equations and of the systems corresponding to them often is not higher than two. The symmetry of the molecules is considered automatically on the whole. The symmetries of the individual groups of molecules are largely taken into consideration. The method can also give information on the interaction of the vibrations of the individual groups.

Calculation of the frequencies... S/020/63/149/002/013/028
B108/B186

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

PRESENTED: October 19, 1962, by I. V. Obreimov, Academician

SUBMITTED: October 5, 1962

Card 2/2

LANDAU, Lev Davydovich, akademik; LIFSHITS, Yevgeniy M.khaylovich, prof.; LIVSHITS, B.L., red.; PLAKSHE, L.Yu., tekhn.red.

[Quantum mechanics] Kvantovaia mekhanika. Izd.2., perer. i dop. Moskva, Fizmatgiz. Vol.3. [Nonrelativistic theory] Nereliativistskaia teoriia. 1963. 702 p. (MIRA 17:1)

LIVSHITS, B.L.; CHUMAYEVSKIY, N.A.

Use of the method of perturbations in analyzing the vibrations of monodeuteromethane and the plane vibrations of ethylene. Opt. i spektr. 15 no.5:609-616 N '63. (MIRA 16:12)

VOL'FSON, N.S.; SHITOVA, Ye.I.; LIVSHITS, B.L., kand. fiz.-mat. nauk, otv. red.

[Optical masers (lasers); bibliographic index of Soviet and foreign literature for the period 1958 to June 1963] Kvantovye opticheskie generatory (lazery); bibliograficheskii ukazatel' otechestvennoi i zarubezhnoi literatury s 1958 po iiun' 1963 g. Moskva, Izd-vo "Nauka," 1964. 175 p. (MIRA 17:8)

1. Akademiya nauk SSSR. Sektor seti spetsial'nykh bibliotek.

KLEPIKOV, Nikolay Petrovich; SOKOLOV, Skiff Nikolayevich; LIVSHITS, B.L., red.

[Analysis and planning of experiments by the method of maximum likelihood] Analiz i planirovanie eksperimentov metodom maksimuma pravdopodobiia. Moskva, Nauka, 1964. 183 p. (MIRA 17:10)

L 63652-65 EEC(b)-2/EWG(r)/EEC(k)-2/EWA(h)/EWA(k)/EWP(t)/EWP(z)/EWD/EWP(i)/EWP(b)/T/
ACCESSION NR: AP5016280 UR/0386/65/001/005/0023/0025
Pi-4/Pu-4/Pu-4/Po-4/Pc-4/Peb SCTB/IJP(c) WG/GG/JAJ/WH

AUTHOR: Livshits, B. L.; Nazarov, V. P.; Sidorenko, L. K.; Tsikunov, V. N. 81 73

TITLE: Dependence of spectral composition of stimulated emission on the velocity of motion of the crystal 21

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 1, no. 5, 1965, 23-25, and insert between pages 24 and 25

TOPIC TAGS: laser, 25 stimulated emission, 15 glass laser, crystal laser, line narrowing, population inversion

ABSTRACT: The authors report on an effect previously predicted by them (DAN SSSR, in press) in which the inhomogeneity of the inverse population in stimulated emission from solid media (crystals, glasses, etc.) becomes smoothed out when the crystal moves relative to the resonator. Because of this, the number of modes decreases and the stimulated-emission spectrum becomes narrower, but the total intensity remains unchanged, so that the spectral density of the stimulated emission increases. In the tests, a ruby crystal 12 cm long was made to execute reciprocating motion with maximum velocity ~ 35 cm/sec inside a plane resonator with

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distance 50 cm between mirrors. The light-pump pulse could be turned on at different phases of crystal motion, corresponding to reciprocating velocity relative to the resonator from 0 to ~ 35 cm/sec. The spectrum of the induced emission was analyzed with the aid of a Fabry-Perot etalon. The interference patterns were photographed. Measurements were made at different air gaps between mirrors. Comparison of the interference patterns (5 mm gap) of emission from the stationary and moving (~ 35 cm/sec) crystal near the lasing threshold (V = 1800 V) shows that when the crystal moves a whole series of side modes ceases to generate, the intensity of the central modes increasing. This means that as the crystal moves the central modes draw energy from the large volume occupied by the active centers (compared with the stationary crystal), thereby suppressing the weaker modes. In the case of a higher pump level (V = 2000 V) and the same ~ 35 cm/sec velocity, the effect of the increased spectral density is less pronounced. This means that in order to approach single-mode generation it is necessary to increase the velocity of the crystal. In general, the motion of the crystal makes it possible to eliminate the inhomogeneity of the transition responsible for generation of the active centers

"The authors are grateful to Academician I. V. Obreimov for interest and continuous attention to the work, Ch. K. Mukhtarov for fruitful discussion of the problem, N. K

L 63652-65
ACCESSION NR: AP5011280

6

Bel'skiy and D. A. Muchamedova for participating in the measurements, and A. Strel'tsov, D. D. Brezhnev and V. I. Luntsov for help in constructing the generator with moving crystal. Orig. art. has 2 figures. [02]

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 22Apr65 ENCL: 00 SUB CODE: EC, OP

NO REF SOV: 001 OTHER: 004 ATD PRESS: 4055

Card 3/3

LIVSHITS, B.L. [Livshyts', B.L.]; TSIKUNOV, V.N. [TSykunov, V.M.];

Generation of induced radiation in a prestationary regime.
Ukr. fiz. zhur. 10 no. 11:1267-1270 N '65. (MIRA 18:12)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova AN SSSR, Moskva. Submitted August 3, 1965.

L 14670-66 FBD/EWT(1)/EEC(k)-2/T/EWP(k)/EWA(h) SCTB/IJP(c) WG
ACC NR: AP6002726 SOURCE CODE: UR/0056/65/049/006/1843/1845

AUTHOR: Livshits, B. L.; Tsikunov, V. N.

ORG: Institute of General and Inorganic Chemistry, Academy of Sciences SSSR (Institut obshcheiy i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Spectral properties of stimulated emission in a broad pumping range

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 6, 1965, 1843-1849

TOPIC TAGS: stimulated emission, laser pumping, laser radiation spectrum, laser emission

ABSTRACT: The spectrum of stimulated emission of a laser operating in the stationary regime is calculated analytically under the assumption that the pump power is low. The axial-mode model proposed by C. L. Tang et al. (J. Appl. Phys. v. 34, 2289, 1963) is used. The initial equations introduced by Tang et al. are made more precise, and in addition, the authors consider, as a continuation of their earlier work (DAN SSSR v. 163, 870, 1965), the influence of the pump power on the narrowing of the spectrum of a laser in which the active centers move relative to the resonator mirrors. A new effect is predicted, wherein the spectrum becomes

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saturated with axial modes, i.e., the laser emission spectrum is found to have a finite width. However, although the number of modes is limited, it is still large and the power distribution over the modes is parabolic. The analysis shows that reduction in the number of modes can be effected by using a low-Q resonator, and by using a nonstationary mode with a spike duration in excess of a critical value. Some results of the theoretical deductions of this paper have been confirmed in experiments performed by the authors and reported elsewhere (with V. P. Nazarov and L. K. Sidorenko, ZhETF Pis'ma, v. 1, No. 5, 23, 1965). "The authors thank Academician I. V. Obreimov for interest in the work and Ch. K. Mukhtarov for a useful discussion." Orig. art. has: 3 figures and 25 formulas. [02]

SUB CODE: 20/ SUBM DATE: 14Jun65/ ORIG REF: 005/ OTH REF: 005
ATD PRESS: 4/96

L 46149-65 EEC(b)-2/EWG(r)/EEC(k)-2/EWA(h)/EWA(k)/EWP(k)/EWT(l)/EEC(t)/FBD/T/
EWA(m)-2 Pf-4/Pi-4/Pl-4/Pm-4/Pn-4/Po-4/Peb SCTB/IJP(c) WG
ACCESSION NR: AP5013752 UR/0020/65/162/002/0314/0315

47
46
B

AUTHOR: Livshits, B. L.; Tsikunov, V. N.

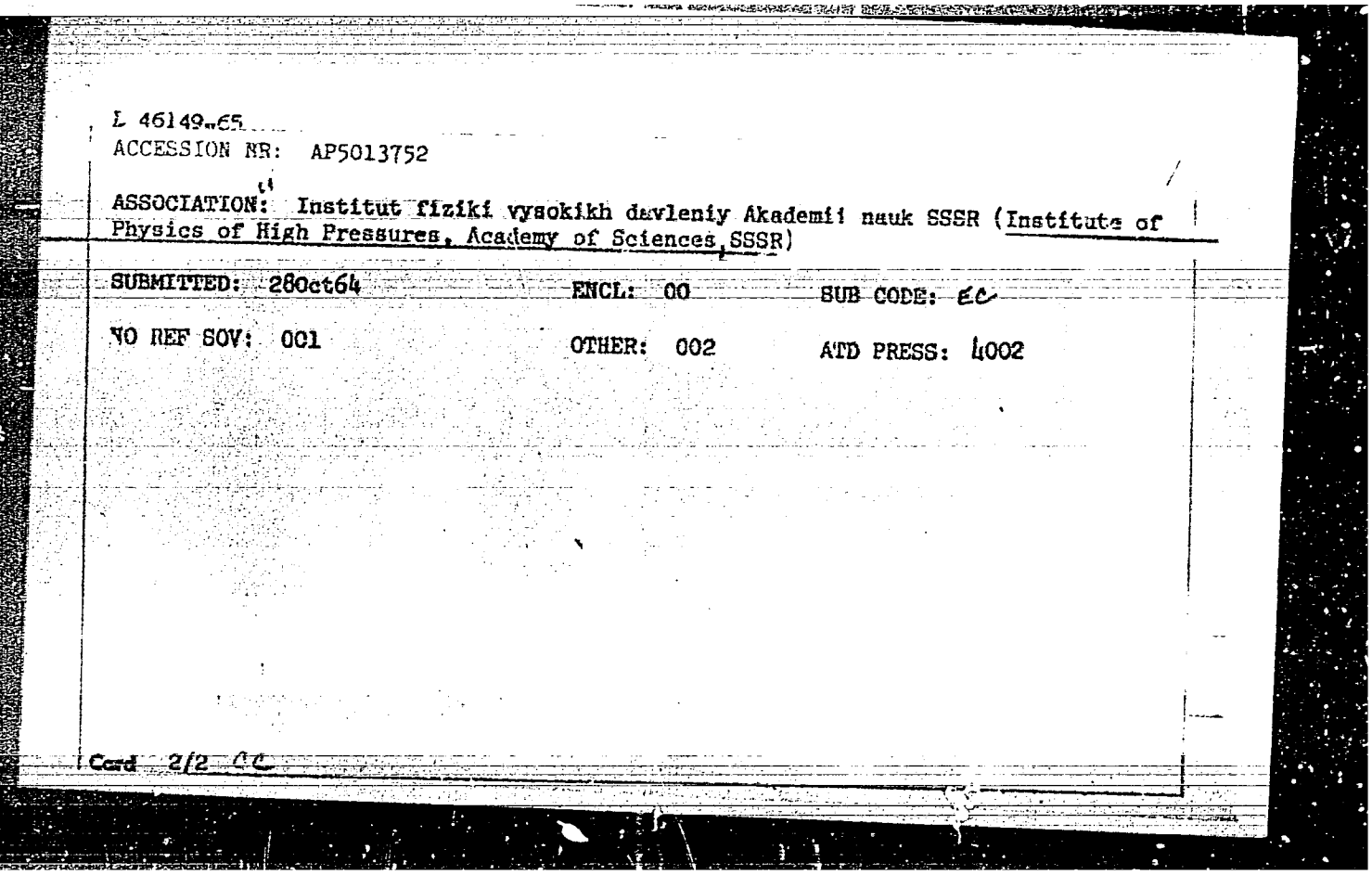
TITLE: Importance of diffusion of an inverted population during generation of stimulated emission

SOURCE: AN SSSR. Doklady, v. 162, no. 2, 1965, 314-315

TOPIC TAGS: population inversion, stimulated emission, laser, cavity, laser cavity, diffusion

ABSTRACT: An analysis of the equation for inverted population with the diffusion term taken into account shows that diffusion can substantially affect (especially at low temperatures) the spectral composition of stimulated emission and the number of emitted quanta. It is shown that with greater diffusion the number of modes in the cavity will be reduced and the spectral width will decrease. It is pointed out that a narrowing of the emission spectra should occur when the concentration of active centers in the crystal is increased. Orig. art. has: 6 formulas. [CS]

Card 1/2



L 46149-65
ACCESSION NR: AP5013752

ASSOCIATION: Institut fiziki vysokikh davleniy Akademii nauk SSSR (Institute of Physics of High Pressures, Academy of Sciences SSSR)

SUBMITTED: 28Oct64 ENCL: 00 SUB CODE: EC

NO REF SOV: 001 OTHER: 002 ATD PRESS: 4002

Card 2/2 CC

L 1417-66 EWA(k)/FBD/EWT(1)/EWT(m)/EEC(k)-2/EWP(i)/T/EWP(k)/EWA(m)-2/EWA(h)
SOTB/EWG(c) WO/GG
ACCESSION NR: AP5020828 UR/0020/65/163/004/0870/0872

AUTHOR: Livshits, B. L.; Tsikunov, V. N. 44,55

TITLE: Generation of stimulated emission by a crystal moving inside a cavity

SOURCE: AN SSSR. Doklady, v. 163, no. 4, 1965, 870-872

TOPIC TAGS: ruby laser, laser theory, laser pumping, resonant cavity

ABSTRACT: This is a continuation of an earlier paper (DAN v. 162, no. 2, 1965) in which it was shown that the inverse-population inhomogeneities produced along the axis of a uniformly pumped laser crystal cannot be eliminated by diffusion of the inverse population, at least at room temperature. In this article the authors consider the effect of relative motion of the emitting crystal and a cavity with flat end mirrors in which a system of axial modes is produced. A stationary solution is obtained for the system of kinetic equations for the inverse population and the number of photons in the i-th axial mode. The conditions under which only a single stationary mode will be generated are obtained. For example, in the case of a ruby laser the relative velocity of the ruby and cavity must exceed 0.5 cm/sec. The relative motion causes the number of generated photons to change by 50%. The calculations are based on a simplified laser model with stationary cavity mirrors and two active centers with uniformly broadened luminescence line. Calculations using

Card 1/2

L 1417-66

ACCESSION NR: AP5020828

a model with external mirrors, with the distance between the mirrors and the end faces of the crystal assumed small compared with the crystal length, yielded essentially the same results. The need for experimental verification of the calculations is indicated in the conclusion. "The authors thank Academician I. V. Obreimov for interest." This report was presented by I. V. Obreimov. Orig. art. has: 15 formulas. [02]

ASSOCIATION: Institut fiziki vysokikh davleniy Akademii nauk SSSR (Institute of High Pressure Physics, Academy of Sciences, SSSR)

SUBMITTED: 28Oct64 ENCL: 00 SUB CODE: EC, SS

NO REF SOV: 001 OTHER: 002 ATD PRESS: 4099

Card 2/2

L 21429-66 FBD/EWT(l)/EWP(e)/EWT(m)/EEC(k)-2/T/EWP(k)/EWA(h) IJP(c) WG/WH
ACC NR: AP6011491 SOURCE CODE: UR/0386/66/003/007/0279/0281

AUTHOR: Livshits, B. L.; Nazarov, V. P.; Sidorenko, L. K.; Tursunov, A. T.; Tsikunov, V. N.

ORG: Institute of General and Inorganic Chemistry, Academy of Sciences SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Features of the time behavior of the generation in a laser with moving ruby crystal

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 7, 1966, 279-281

TOPIC TAGS: ruby laser, laser emission, laser pulsation, laser r and d

ABSTRACT: This is a continuation of earlier work (Pis'ma ZhETF v. 1, no. 5, 35, 1965) where it was shown that a laser with a ruby crystal moving along the axis of a planar resonator with speed v ~ 30 cm/sec radiates energy in a narrower spectral interval than a laser with stationary crystal, and that this increases the spectral density of the stimulated emission. To check whether continuous generation can be realized in a laser with moving crystal, and to investigate the influence of crystal motion on the time behavior of the laser generation mode, the authors used high-speed photography partially supplemented with oscillograms pertaining to the start

Card 1/2

L 21429-66

ACC NR: AP6011491

2

of generation. All measurements were made at room temperature. It was observed first that in a wide range of above-threshold pumping, even at speeds v ~ 40 cm/sec, a sharp increase takes place in the frequency of the lasing spikes, until they merge into continuous regions which are short compared with the generation duration. Further increase in the speed, at ~1.1 of threshold pump, resulted in a gradual expansion of the continuous regions. At speeds v ~ 80 cm/sec the generation becomes continuous in a number of cases practically from start to end, but the intensity oscillations still disclose traces of the spike regime. The transformation of spike generation into continuous generation is greatly improved by introducing into the resonator a round diaphragm of 1 mm diameter, which increases the diffraction losses and prevents by the same token the generation by modes with high transverse indices. The level of the continuous generation then becomes approximately stationary. Detailed investigations of the conditions necessary to ensure continuous generation in a laser with moving crystal should make it possible in the future, on the one hand, to formulate the principles of continuous operation of a solid-state laser with a moving crystal, and, on the other, explain the spike character of the generation of most contemporary solid-state lasers. The authors thank Academician I. V. Obreimov for interest in the work and Ch. K. Mukhtarov for useful discussion of the results. Orig. art. has: 1 figure. [02]

SUB CODE: 20/ SUBM DATE: 05Jan66/ ORIG REF: 001/ OTH REF: 001/ ATD PRESS: 4221

Card 2/2

L 39518-66 EWT(1) GG/GD

ACC NR: AP6015086 SOURCE CODE: UR/0020/66/168/001/0072/0075

AUTHOR: Livshits, B. L.; Stolyarov, S. N.; Tsikunov, V. N.

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakov, Academy of Sciences SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Effect of excitation diffusion on multiple-mode emission conditions

SOURCE: AN SSSR. Doklady, v. 168, no. 1, 1966, 72-75

TOPIC TAGS: laser optics, resonator, optic pumping, electromagnetic field

ABSTRACT: A general solution is given for a system of equations describing population inversion and the behavior of the electromagnetic field within a Fabry-Perot resonator with regard to excitation diffusion. The analysis is restricted to axial modes. An expression is derived for the maximum number of simultaneously emitted modes at high pumping energies. We thank Academician I. V. Obreimov for interest in this work. [14]
Orig. art. has: 18 formulas.

SUB CODE: 20/ SUBM DATE: 04Aug65/ ORIG REF: 002/ OTH REF: 003/
ATD PRESS: 5104

UDC: 535.232.4

Card 1/1 vmb

28217
S/194/61/000/005/052/078
D201/D303

9,7710

AUTHORS: Livshits, B.N, and Kapitanov, R.A.

TITLE: A new recording pen-galvanometer

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1961, 5, abstract 5 E24 (Novosti med. tekhn. 1960, no. 5, 98-101)

TEXT: A polarization type recording galvanometer (model ЧПГ-4 (ChPG-4) has been designed for use in multi-channel systems. The range of recorded frequencies - 140 c/s ± 10%. The error of amplitude response is ± 0.5 mm at amplitudes up to ± 14 mm. Length of pen is 100 mm. Instability of the zero line is ± 0.3 mm with a demagnetizing field frequency of 400 c/s. The volume of the galvanometer 150 cm^3. Weight 800 g. Control power 6 VA. The moment of inertia of the moving part is 16 g/cm^2. The stability of the zero line is obtained without springs by an induction of 18,000 gauss in 0.2 mm gaps. The above frequency range has been obtained

Card 1/2

28217
S/194/61/000/005/052/078
D201/D303

A new recording pen-galvanometer

because liquid damping has been abandoned in favor of shunting of part of the winding by an RC shunt. The changes in the yoke and winding design made it possible to reduce the amount of copper used by 5 times, the volume 2.2 times, and to reduce the weight by 30% compared with the old model ChPG-2. The dispersion fields do not go at all beyond the surfaces nearly in contact with galvanometers. This is because they are nearby, in the recording unit. This permits the exclusion of their influence upon each other and to utilize the chart width in full. 2 references. [Abstracter's note: Complete translation]

LH

Card 2/2

S/194/61/000/006/047/077
D201/D302

AUTHOR: Livshits, B.N.

TITLE: A transistorized voltage stabilizer

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1961, 5, abstract 6 E32 (Novosti med. tekhn. 1960, no. 4, 52-62)

TEXT: An analysis is given of the operation of low voltage semi-conductor stabilizing circuits, in particular of the semi-conductor stabilizing circuit. Design formulae are derived for such a circuit and recommendations as to the choice of components given. An example of circuit design is given for the stabilization of the heat chain of amplifying valves of an electroencephalograph. A description is given of a network which makes it possible to stabilize currents up to 1 amp at 19 V. The stabilization drift factor is about 1000. The ripple is lowered from 1.9 V at the input to 10^{-1} V at the output. 3 references. [Abstracter's note: Complete translation]

Card 1/1

S/194/61/000/008/006/092
D201/D304

AUTHOR: Livshits, B.N.

TITLE: Damping of fast acting galvanometers

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 8, 1961, 8, abstract 8 A49 (Novosti med. tekhn. 1960, no. 4, 63-69)

TEXT: The errors are considered of amplitude-frequency and phase characteristics of the galvanometer. By more accurately adjusting damping of the oscillating system of the recorder - better use may be made of the full frequency range. The un-damped regime should be used in those cases when at least the central band of frequencies is known before hand. This is what takes place in medical diagnostical equipment, where the frequencies of function to be observed are known with respect to each instrument, e.g. el.-encephalogram, el.-cardiogram, el.-myogram, etc. As differing from liquid damping - the application of electromagnetic damping introduces into

Card 1/2

Damping of fast acting galvanometers

the oscilla-equation a term with a third derivative with respect to time. The presence of the additional parameter makes it possible to control better the system properties and as a result, to extend nearly twice the operating range of the recorder. The analysis is given of the second and third order linear systems and the advantages of the latter are shown. 2 references. [Abstracter's note: Complete translation]

Card 2/2

S/194/61/000/006/045/077
D201/D302

AUTHORS: Livshits, B.N. and Solov'yev, N.A.

TITLE: Recording devices in electromedical diagnostic equipment

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1961, 5, abstract 6 E26 (Elektronika v meditsine, M-L, Gosenergoizdat, 1960, 130-136)

TEXT: The advantages are shown of fast-operating recorders with direct writing. Technical data are given of a polarized pen recorder ЧПГ (ChPG) designed at the VNII MIiO. The non-uniformity of frequency response within the range 0-120 c/s is 1 db, the amplitude response is linear within ± 15 mm with an error of 5%. A survey of other methods of direct recording is given: Electro-graphical, jet-recording (mingo-graphical) with electrostatic control, etc. [Abstracter's note: Complete translation]

Card 1/1

KAPITANOV, R.A.; LIVSHITS, B.N.

The new ChPG-4 ink-recording galvanometer. Priborostroenie no.4:21-22 Ap '62. (MIRA 15:4)
(Galvanometer)

LIVSHITS, B. N.

Damping of quick-acting galvanometers. Priborostroenie no.12: 1-3 D '62. (MIRA 16:1)

(Galvanometer)

VINOKHODKIY, S.A.; [illegible]

Analysis of kinematic errors of the [illegible] sphygmomanometer. Izm. tekh. no.4:43-45 [illegible] '65.

(MIRA 18:7)

Z/011/62/019/012/001/005
E112/E435

AUTHOR: Livshits, B.R.

TITLE: Sulphur-containing polymers and their possible application as film-formers

PERIODICAL: Chemie a chemická technologie. Přehled technické a hospodářské literatury. v.19, no.12, 1962, 563, abstract Ch 62-7611. (Lakrokras. Materialy, no.4, 1962, 79-85)

TEXT: Polysulphonates and polysulphides, their chemical structure, preparation, properties and possible applications are discussed. Some of the compounds, e.g. arylmercaptans and dimercaptans, react with epoxy-derivatives yielding hard or rubberlike polymeric resins with a molecular weight of 1000. Thiophenols or their homologues may be also used as starting materials for the preparation of the polymers. The polymers can also be prepared by polycondensation of unsaturated acids with polythiols. The reaction of ethylenic oxides with hydrogen sulphide leads to cyclic sulphides and sulphones, and both these classes of compounds can be used as starting materials for the production of polymers. 106 literature references.

Card 1/1

[Abstracter's note: Complete translation]

L 52139-65 EPF(c)/EPR/EWP(j)/EWA(c)/EWT(m)/T Pc-4/Pr-4/Ps-4 RPL WW/RM

ACCESSION NR: AP5015290 UR/0286/65/000/009/0067/0067

AUTHORS: Korshak, V. V.; Kronyants, I. L.; Vinogradova, S. V.; Gerbaryan, N. P.; Pavlov..., V. A.; Livshits, B. R.

TITLE: A method for obtaining polyarylates. Class 39, No. 170662

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 67

TOPIC TAGS: polyarylate, carboxylic acid, phenol, hexafluoropropane

ABSTRACT: This Author Certificate presents a method for obtaining polyarylates based on the anhydrides of dicarboxylic acids and bisphenols. To increase the thermal stability, elasticity, and solubility, and also to broaden the assortment of self-stopping polyarylates, 2,2-bis(4-carboxyphenyl)-hexafluoropropane is used as the anhydride of carboxylic acid.

ASSOCIATION: none

SUBMITTED: 05Jun64 ENCL: 00 SUB CODE: OC

NO REF SOV: 000 OTHER: 000

Card 1/1

L 20635-66 EWP(j)/EWT(m) RM/WW

ACC NR: AP6011196 SOURCE CODE: UR/0413/66/000/006/0027/0027

INVENTOR: Knunyants, I. L.; Gambaryan, N. P.; Livshits, B. R.; Simonyan, L. A.

ORG: none

TITLE: Preparative method for diphenylbis(trifluoromethyl)methane-4,4'-dicarboxylic acid. Class 12, No. 179764

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 27

TOPIC TAGS: fluorinated organic compound, carboxylic acid

ABSTRACT: An Author Certificate has been issued for a preparative method for diphenylbis(trifluoromethyl)methane-4,4'-dicarboxylic acid. The method involves the reaction of hexafluoroacetone with toluene in the presence of anhydrous hydrogen fluoride, and subsequent oxidation of the reaction product with dilute nitric acid. [SM]

SUB CODE: 07/ SUBM DATE: 04Nov63/ ATD PRESS: 4225

Card 1/1 UDC: 547.539.16'584.05

LIVSHITS, B.S. (Leningrad)

Organization of stomatological aid in Petrograd District of Leningrad. Stomatologiia 42 no.2:88-89 Mr-Ap'63 (MIRA 17:3)

18.1200,18.8100

77708
SOV/148-60-1-31/34

AUTHORS: Belyatskaya, I. S., Livshits, B. S.

TITLE: Study of Phase-Transformation Kinetics in Heat-Resistant Alloy EI617

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, 1960, Nr 1, pp 175-179 (USSR)

ABSTRACT: Heat-resistant Ni-base alloy containing 15.3% Cr, 1.99% Ti, 1.78% Al, 5.22% W, 0.26% V, 3.89% Mo, 1.38% Fe, 0.05% B, 0.09% C, was subjected to a 4-stage treatment, i.e., homogenizing by annealing for 2 hr, quenching in water from 1,200° C, retarded tempering at 100 to 1,050° C for 0.5 to 100 hr, and rapid cooling in water. The electric resistance, hardness, and volume of the specimens were measured in the course of treatment. A precipitation hardening at a certain critical rate and subsequent tempering in previous experiments had increased the heat resistance of alloy EI437, whose strength is lower than that of EI617. The temperature drop from 900 to 700° C

Card 1/5

led to the precipitation hardening of EI437 and caused the formation of α'-phase, then at 750 to 400° C increased the electrical resistance because of Cr segregation, and below 650° C brought the alloy into the so called K-state in which the interatomic-bond strength and heat resistance rise and diffusion drops (H. Thomas, Z. S. Physik, 129, 219, 1951). Thus, it was known, that the heat resistance of alloys can be improved by taking advantage of K-state at the temperatures of industrial use. Some elements such as Mo were known to contribute to the formation and intensification of K-state of Ni-base alloys, while others such as Al and Ti proved to elevate the temperature at which K-state occurs. In view of these facts, the authors sought elevation of the temperature and intensification of the K-state by adding to Nichrome: Ti, Al, Mo, W, and V in amounts given above. The K-state was found to exist at 450 to 950° C, and α'-phase at 800 to 1,050° C. Both intervals showed electrical resistance of the alloys above normal

(Fig. 1). The drop of the electrical resistance above and below the temperatures of K-phase apparently points to the formation of a homogenous solid solution after diminishing of K-phase both at rising and dropping temperatures. However, the higher position of the cooling curve obviously indicates that K-state remains to a certain extent preserved even at room temperatures. The higher content of alloying elements proved to shift K-state to higher temperatures and to elevate its intensity. The maximum intensities of Nichrome EI437 and EI617 lay at 550, 650, and 725° C and were elevated by 4, 4.5, and 9%, respectively. Tempering at 100 to 400° C did not alter the physical properties of the alloys. Tempering at 600° C increased their electrical resistance and hardness to a maximum and reduced the volume of specimens to a minimum. K-state began to diminish above 600° C; at 800 to 100° C the electrical resistance due to K-state dropped below that of age hardened specimens, whose somewhat higher electrical resistance is related to α'-phase.

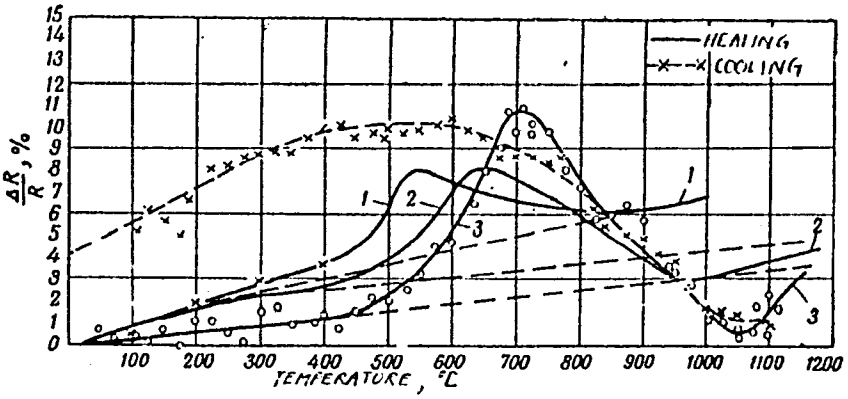


Fig. 1. Change in the electrical resistance of Nichrome EI437 and EI617 during continuous heating and cooling: (1) Nichrome 80-20, heating rate - 200° C per hr; (2) alloy EI437, heating rate - 200° C per hr; (3) alloy EI617, heating and cooling rate 150° C per hr.

Card 4/5

Study of Phase-Transformation Kinetics in Heat-Resistant Alloy EI617

77708
SOV/148-60-1-31/34

There are 4 figures; and 6 references, 5 Soviet, 1 German.

ASSOCIATION: Moscow Steel Institute (Moskovskiy institut stali)

SUBMITTED: October 22, 1958

Card 5/5

VOLKOVA, K.I.; LIVSHITS, B.S.

[Automatic telephone exchanges] Uchrezhdencheskie avtomaticheskie telefonnye stantsii. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1952. 77 p.
(MLRA 6:7)
(Telephone, Automatic)

LIVSHITS, B.S.

[Automatization of district telephone communications] Avtomatiza-siia vnutriraionnoi telefonnoi sviazi. Moskva, Gos. izd-vo lit-ry sviazi. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1953. 44 p.
(MLRA 7:1)
(Telephone, Automatic)

LIVSHITS, B.

USSR/ Electronics - Radio

Card : 1/1

Authors : Livshits, B., and Drugov, V.

Title : Remote Control of Rural Radio Relay Stations

Periodical : Radio, No. 4, 20 - 23, April 1954

Abstract : Detailed description of equipment designed by the Leningrad Branch of the USSR Central Research Institute, and used in the remote control of rural radio-relay stations. One circuit diagram and one block diagram illustrating the general layout and the arrangement of component parts in the remote-control system, are given.

Institution : ....

Submitted : ....

LIVSHITS, B. S.

USSR/Miscellaneous - Telephony

Card 1/1 : Pub. 133 - 3/20

Authors : Livshits, B. S., Cand. of Techn. Sc.; and Kutashov, P. D., Engineer

Title : Device for semiautomatic telephone connection for rural telephone systems

Periodical : Vest. svyazi 7, 5-8, July 1954

Abstract : The development of a device for semiautomatic telephone connection for rural telephone systems is announced. The technical characteristics and mode of operation of this device are described. The wiring diagram for the new semiautomatic telephone connection devices is shown. Illustration.

Institution : Ministry of Communications, USSR

Submitted : ...

LIVSHITS B. S.

USSR/ Electronics - Radio rebroadcasting stations

Card 1/1 Pub. 133 - 7/16

Authors : Livshits, B. S., and Vasil'yeva, L. I.

Title : Automatization of the control of rural radio rebroadcasting units

Periodical : Vest. svyazi 5, 14-16, May 1955

Abstract : The Leningrad Province Scientific Research Communications Institute, designed and produced an apparatus for a remote control of the MGSRTU-100 TUB-100, TU-500, and TU-600 rural radio rebroadcasting units. The construction, operation, function and installation of the above mentioned apparatus are described. Circuit diagrams.

Institution : .....

Submitted : .....

LIVSHITS, B.S.

LIVSHITS, B.S., kand. tekhn. nauk; KUCHERYAVYY, Ye.I., kand. tekhn nuak.

Rural block-type relay automatic dial telephone system. Vest. sviazi 17 no.11:3-5 N '57. (MIRA 10:12)

1. Nachal'nik laboratorii Nauchno-issledovatel'skogo instituta tekhnologii svarki (for Livshits). 2. Starshiy nauchnyy sotrudnik Nauchno-issledovatel'skogo instituta tekhnolgii svarki (for Kucheryavyy).

(Telephone, Automatic)

LIVSHITS, B.S.; KUTASHOV, P.D.; SEMENOV, I.I.; GOLUBTSOV, I.Ye., otv. red.; KONDRASHINA, N.M., red.; MARKOCH, K.G., tekhn.red.

[Joining of rural automatic telephone districts with city ten-step automatic telephone districts; information collection] Sviaz' sel'skikh ATS s ATS-47; informatsionnyi sbornik. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1958. 114 p. (MIRA 12:9)

1. Russia (1923- U.S.S.R.) Ministerstvo svyazi. Tekhnicheskoye upravleniye. 2. Sotrudniki Nauchno-issledovatel'skogo instituta gorodskoy i sel'skoy telefonnoy svyazi Ministerstva svyazi SSSR (for Livshits, Kutashov, Semenov).
(Telephone)

LIVSHITS, Boris Samoylovich; NOVIKOV, Georgiy Arsen'yevich; FARAFONOV, Leonid Stepanovich; GOLUBTSOV, I.Ye., otv.red.; LUZHETSKIY, N.N., red.; MARKOCH, K.G., tekhn.red.

[Rural automatic telephone stations] Sel'skie avtomaticheskie telefonnye stantsii. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1958. 195 p. (MIRA 13:7)
(Telephone, Automatic)

LIVSHITS, B. S.

B. S. Livshits, M. M. Vitsnudel' and S. V. Levina - "Device for Sending Inductive Signals."

Authors' Certificates, Elektrosvyaz', 1958, No. 7, pp 77.

SOV-111-58-9-5/30

AUTHORS: Livshits, B.S., Candidate of Technical Sciences, Head of the Laboratory; Movshovich, I.Kh. and Frolova, L.G., Engineers, Scientific Collaborators

TITLE: A Crossbar Dial Office (Koordinatnaya ATS)

PERIODICAL: Vestnik svyazi, 1958, Nr 9, pp 3 - 6 (USSR)

ABSTRACT: The author describes the K-57 block type rural crossbar dial office with a capacity of 10-40 numbers. Basic switching is carried out by multiple crossbar connectors with mechanical blocking and type RPMB and RPN relays. During operation with this system, current is drawn only by the microphones of the conversing subscribers. The office is made up of blocks of 10 numbers each, with a maximum capacity of 40 numbers. It is powered from a dc source with a rating of 60v. Daily current consumption is 0.8 to 1 amphrs/10 numbers. The author gives the skeleton structure of the office, describes its operating principles and constructional design. There are 3 photos, 1 circuit diagram and 1 schematic diagram.

Card 1/2

A Crossbar Dial Office SOV-111-58-9-5/30

ASSOCIATION: NIITS

1. Telephone communications systems--Equipment 3. Telephone communications--Performance

Card 2/2

SOV/106-58-9-9/17

AUTHORS: Livshits, B.S., and Movshovich, I. Kh.

TITLE: Commutation Elements using a Relay with Magnetic Blocking (Elementy kommutatsii s ispol'zovaniyem rele s magnitnoy blokirovkoy)

PERIODICAL: Elektrosvyaz', 1958, Nr 9, pp 55 - 62 (USSR)

ABSTRACT: The cost of the power supplies for small automatic telephone exchanges is an appreciable fraction of the total cost. For example, a rural exchange with a capacity of 20 numbers costs 9500 roubles, of which 8000 are accounted for by power supplies. The relatively high expenditure on power supplies is traced to two causes: 1, the relatively large consumption of electrical energy by the station; 2, the stringent requirements on smoothing of the supply voltage. The heavy consumption of electricity also increases the annual running charges of a station. For the example quoted above this figure is 3000 roubles, more than 50% of which can be traced to electricity bills and the maintenance of supplies. The scientific research institute which looks after urban and rural telephone exchanges (NIITS), together with the

Card 1/4

Commutation Elements using a Relay with Magnetic Blocking

"Krasnaya zarya" (Red Dawn) factory has developed an automatic relay exchange with a capacity of 10 - 40 numbers in which the consumption of power is reduced 20 - 25 times in comparison with existing relay exchanges. This economy is achieved mainly on account of the wide use of a magnetic-blocking relay which does not require power to maintain the armature in the working position. The current type of 20-number automatic exchange contains 320 relays while the new type contains 416 including 215 of the new model (P P M b) whose cost is 10% higher than the ordinary kind (P P H). The cost of the complete station (12,500 roubles) is higher than that of the existing ones (9,500 roubles). Nevertheless, when power supplies are taken into account there is a saving of 21% in capital expenditure and 33% in running costs. The construction principles of the magnetic-blocking relay (P PM b) are shown in Fig 1. The general assembly is similar to the ordinary type (P P H) with a few modifications. The armature is split across its width and the gap is bridged both by a bronze plate and by a short bar magnet.

Commutation Elements using a Relay with Magnetic Blocking

The material of the bar magnet is AHK_o4 having the following magnetic properties: remanence, 12,300 gauss; coercive force, 500 oersted; specific magnetic energy, 150,000 erg/cm^3. The separation force on the armature in the working position is 100 - 200 gm (including the spring-stack loading). The tractive force from the unoperated position is 30 - 50 gm. The moving part of the armature is 55 mm long and the fixed part, 35 mm. The magnetic system of the relay is shown in Fig 2. Fig 2(a) shows the unenergised position when the bar magnet is in good contact with both parts of the armature. Fig 2(b) shows the additional flux caused by current in the operating winding. In Fig 2(v) the armature has been attracted and the operating current has fallen to zero. The bar magnet now makes poor contact with the moving portion of the armature. In Fig 2(g) current has been applied to the resetting winding and the magnet will be brought back to its original position. The sensitivity of the relay is that of its prototype (P P H). The ampere-turns needed to re-set the relay are 1/3 of those needed to operate it.

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Commutation Elements using a Relay with Magnetic Blocking

Fig 3 shows circuits suitable for applying short-duration operating currents to the relay and also for re-setting it. Fig 4 shows a suitable diagram for serial and supervisory relays. Fig 5 illustrates the use of the relay as a test facility. Fig 6 shows the principle of a relay type selector. Fig 7 is a method of altering the loading of instruments in an economical manner. The table in the last paragraph gives details of bobbin combinations, showing the numbers of turns, wire sizes and weights. The relay was first brought into use in January, 1957. There are 7 figures and 1 table.

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Card 4/4

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