ACC NR: AT6036416 SOURCE CODE: UR/2536/66/000/066/0076/0086

AUTHOR: Kolachev, B. A. (Candidate of technical sciences); Bukhanova, A. A. (Candidate of technical sciences); Livanov, V. A. (Doctor of technical sciences; Professor)

ORG: none

TITLE: Phase distribution of hydrogen in (α + β) titanium alloys

SOURCE: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy, no. 66, 1966. Struktura i svoystva aviatsionnykh staley i splavov (Structure and properties of aircraft steels and alloys), 76-86

TOPIC TAGS: TEMPERATURE DEPENDENCE, titanium alloy, hydrogen, phase composition / VT6 titanium alloy

ABSTRACT: While it is known (Livanov, V. A., Bukhanova, A. A., Kolachev, B. A. Vodorod v titane, Metallurgizdat, 1962) that hydrogen in (α + β) Ti alloys concentrates in the β-phase, the temperature dependence of the phase distribution of hydrogen still has not been established. Accordingly, the authors investigated the interaction between hydrogen and α- and β-phases of (α + β) Ti alloys (the alloys Ti + 0.5% Mo and Ti + 12.5% Mo, representing the α- and β-phases of the Ti-Mo system in an equilibrium at 800°C, and the alloys Ti + 8% Al + 2% V and Ti + 4% Al + 6% V, representing the α- and β-phases of the industrial alloy VT6

Card 1/3

UDC: 669.017:669.295

ACC NR: AT6036416

(Ti + 6% Al + 4% V) in an equilibrium at 900-925°C) at various temperatures. Hydrogen was added in small portions to the vacuum-annealed alloy specimens, each succeeding portion being introduced only after the equilibrium pressure due to the addition of the preceding portion had set in. The amount of the hydrogen absorbed by the specimen was determined according to the pressure difference in the system. Findings: in the two-phase region hydrogen is nonuniformly distributed between the phases. The ratio between hydrogen concentrations in the β- and α-phases is determined by the entropic factors and by the heats of dissolution of hydrogen in the phases. At low temperatures in (α + β) Ti alloys hydrogen gets concentrated in the β-phase, since the thermal effect of the dissolution of hydrogen in this phase (taking polarity into account) is smaller than in the α-phase. At temperatures of the order of 800-900°C hydrogen satisfactorily dissolves in the β- and α-phases; the hydrogen concentration in the β-phase of the Ti-Mo and Ti-Al-V systems is only 1.3-1.4 times as high as in the α-phase. As the temperature decreases hydrogen migrates from the α-phase to the β-phase until the hydrogen concentration ratio between these phases C_β/C_α increase to several tens. The thermodynamic analysis of the solutions of hydrogen in α- and β-phases of Ti alloys applies to any two--phase system. Thus, hydrogen concentrations in the α- and β-phases of (α + β) Ti alloys are similar at high temperatures, and it is only at sufficiently low temperatures that hydrogen concentrates in the β-phase. It follows hence that the proneness of (α + β) Ti alloys to hydrogen brittleness must markedly depend on the test temperature and on the previous heat treat-

Card 2/3

ACC NR: AT6036416

ment. The different solubility of hydrogen in different phases may be utilized for the internal degassing of one of the phases at the expense of the other. This method may greatly improve the plasticity of refractory metals which, as a rule, have bcc lattices and thus are particularly susceptible to contamination by interstitial impurities. The same principle can be utilized for the degassing of molten metals by means of substances which do not (or nearly do not) interact with these metals but have a great affinity for hydrogen. If, say, titanium is added to molten aluminum, hydrogen from the melt will migrate to the titanium. Orig. art. has: 7 figures.

SUB CODE: 11 / SUBM DATE: none/ ORIG REF: 006/ OTH REF: 001

Card 3/3

ACC NR: AT6036418 SOURCE CODE: UR/2536/66/000/066/0096/0102

AUTHOR: Kolachev, B. A. (Candidate of technical sciences); Livanov, V. A. (Doctor of technical sciences, Professor); Bukhanova, A. A. (Candidate of technical sciences); Gusel'nikov, N. Ya. (Engineer)

ORG: none

TITLE: On the abrupt decrease in the plasticity of titanium at high temperatures

SOURCE: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy, no. 66, 1966. Struktura i svoystva aviatsionnykh staley i splavov (Structure and properties of aircraft steels and alloys), 96-102

TOPIC TAGS: titanium, hydrogen, plasticity, brittleness, strain

ABSTRACT: According to a previous hypothesis by the first three of the authors (B. A. Kolachev et al. Issledovaniye titana i yego splavov, Izd-vo AN SSSR, 1963) the reason for the hydrogen brittleness of a number of metals is that the hydrogen-atom atmospheres forming at the dislocations are entrained by the latter in the presence of low straining rates, so that the hydrogen concentration at the grain boundaries or at other obstacles at which the disloca-

Card 1/3 UDC: 669.017:669.295

tions pile up becomes sufficient for a sharp acceleration of the development and propagation of cracks leading to fracture of the metal. Now the authors show that the hydrogen brittleness developing in the presence of low straining rates manifests itself within a temperature range (300-550°C) which corresponds to a specific value (10^{-5}-10^{-6} cm^2/sec) of the diffusion coefficient of hydrogen. In this connection, the authors investigate the effect of hydrogen on the mechanical properties of regular (0.002% H_2) and vacuum-annealed (0.02 and 0.05% H_2) rods of technically pure Ti subjected to tensile strength tests at normal (4 mm/min) and low (0.4 mm/min) straining rates. Findings: the minimum elongation per unit length for Ti in the presence of normal straining rate was recorded at 500°C (Fig. 1) while in the presence of the below-normal straining rate (0.4 mm/min) the mechanical properties of the Ti with 0.002% H_2 increase up to a point with increasing temperature whereas those of the Ti with 0.0% H_2 steadily decrease with increasing temperature. These experiments were organized on the assumption that the sharp decrease in the plasticity of Ti at high temperatures is due to hydrogen alone. The experiments revelaed, however, that this sharp decrease in plasticity within the temperature range of 300-550°C also occurs in technically pure Ti (0.002% H_2) -- not as distinctly as in the Ti containing 0.05% H_2 but still distinctly enough. This sharp decrease is apparently due to the presence of O_2 and N_2 and resembles similar phenomena discovered

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000930220020-3"

ACC NR: AT6036418

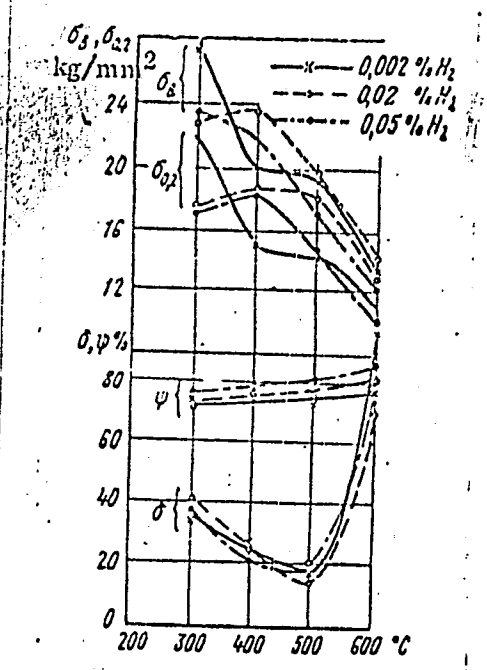

Fig. 1. Effect of temperature on mechanical properties of Ti containing various proportions of H_2 in the presence of a low straining rate.

in Nb, V and other metals. In the presence of hydrogen (0.05% H_2) the decrease in elongation at 400-500°C at low straining rates is compounded by the hydrogen brittleness due to the transport of hydrogen toward the grain boundaries. The effect of hydrogen on the properties of titanium within this temperature range is similar to the effect of strain aging. Orig. art. has: 5 figures.

SUB CODE: 11 / SUBM DATE: none
ORIG REF: 003/ OTH REF: 002

Card 3/3

ACC NR: AP7002867 SOURCE CODE: UR/0149/66/000/006/0142/0145

AUTHOR: Kolachev, B.A.; Livanov, V.A.; Bukhanova, A.A.; Gusel'nikov, N. Ya.; Lyasotskaya, V.S.

ORG: Department of Metal Science and Technology of Thermal Processing of Metals, Moscow Aviation Technology Institute (Moskovskiy aviatsionnyy tekhnologicheskiy institut, Kafedra metallovedeniya i tekhnologii termicheskoy obrabotki metallov)

TITLE: Effect of hydrogen on the structure and properties of variously heat-treated VT3-1 alloy

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 6, 1966, 142-145

TOPIC TAGS: hydrogen embrittlement, ductility, deformation rate, titanium alloy, ~~hydrogen containing titanium alloy~~, alloy strength, ~~alloy brittleness~~, alloy structure/VT3-1 alloy, ~~alloy ductility~~

ABSTRACT: Hydrogen-induced embrittlement of VT3-1 and other α + β titanium alloys depends not only on the hydrogen content, but to a considerable extent on the content of other impurities, heat treatment, grain size and the type and conditions of deformation. To determine the effect of the various factors, several series of specimens of modified (with increased Al, Fe and Si content) VT3-1 [U.S. Ti 155A] titanium alloy with a hydrogen content of up to 0.1 wt.% were annealed at 800C and slowly cooled, or annealed at 840 or 970C, quenched, aged at 550C for 0.5—3 hr and then

Card 1/2 UDC: 669.018.1

ACC NR: AP7002867

subjected to tension tests at a deformation rate of 0.4—4.0 mm/min. In the alloy annealed and slowly cooled, a hydrogen content of up to 0.1% had no significant effect on the ductility of the alloy at a deformation rate as low as 0.4 mm/min, while in the as-quenched alloy deformed at the same rate, a substantial decrease in the reduction of area occurred at a hydrogen content of 0.003% H_2. However, at a strain rate of 4 mm/min, no noticeable change in the reduction of area was observed in as-quenched alloys containing up to 0.05% H_2. The brittleness of as-quenched alloy increased with increasing annealing temperature, since this decreased the amount of residual α-phase and increased the amount of the α-phase. An especially strong effect of hydrogen was observed in aged VT3-1 alloy. Short (0.5 hr) aging at 550C significantly increased the tensile and yield strengths of the alloy containing 0.03 and 0.05% hydrogen and sharply decreased the elongation and reduction of area. The alloy strength decreased and ductility increased with increasing aging time from 0.5 to 3 hr, but changed only slightly with still longer aging.

[WA-88]
[MS]

SUB CODE: 11, 13/ SUBM DATE: 27Apr65/ ORIG REF: 005/ OTH REF: 001
ATD PRESS: 5114

Card 2/2

LIVANOV, V.F., inzhener.

Mastering the production of two-bar railroad ties made of reinforced concrete. Transp.stroi. 6 no.12:6-8 D '56. (MLRA 10:3)
(Railroads--Ties, Concrete)

LIVANOV, V.F., inzh.

Technology of manufacturing reinforced concrete crossties. Transp. stroi. 8 no. 6:8-11 Je '58. (MIRA 11:7)
(Railroads--Ties, Concrete)

LIVANOV, V.F., inzh.

Using electric heating in prestressing reinforcements.
Transp.stroi. 9 no.5:59 My '59. (MIRA 12:12)
(Electric heating) (Prestressed concrete)

BALASHOV, A.A., inzh.; LIVANOV, V.F., inzh.

Making details of large-panel apartment houses of the 1-335 series. Transp.stroi. 10 no.5:25-29 My '60. (MIRA 13:7)

(Apartment houses)
(Precast concrete construction)

IVANOV, G.S., kand.tekhn.nauk; BALASHOV, A.A., inzh.; ISAYEV, N.M., inzh.; KARAMYSHEV, I.A., inzh.; LIVANOV, V.F., inzh.

Increase the production and improve the quality of reinforced concrete crossties. Transp. stroi. 14 no.8:23-25 Ag '64. (MIRA 18:1)

LIVANOV, V.V.

Device for preparing film specimens. Zav. lab. 31 no.8:1027 '65. (MIRA 18:9)

LIVANOV, YU. I.

USSR/ Engineering - Heating unit

Card 1/1 : Pub. 12 - 9/16

Authors : Livanov, YU. I.

Title : Heating unit for starting YaAZ-206 Diesel engines

Periodical : Avt. traktor. prom. 7, 30-31, July 1954

Abstract : The Yaroslav Automobile Construction Factory, designed and produced a special heating unit for starting Diesel engines. Description of the unit is presented, together with an explanation of its operation and structure. Diagrams.

Institution: ..... Yaroslavskiy avtozavod

Submitted : .....

30912
S/190/61/003/012/006/012
B106/B101

15.9420

AUTHORS: Rayevskiy, V. G., Voyutskiy, S. S., Livanova, I. V., Shteynberg, Z. D.

TITLE: Effect of various types of structure formation of elastomers on their adhesion to fibrous polymers. I. Effect of vulcanization by sulfur on adhesion of rubber to fibrous polymers

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 12, 1961, 1827-1832

TEXT. It was found previously (Ref. 4: V. G. Rayevskiy, S. S. Voyutskiy, Dokl. AN SSSR, 135, 133, 1960; Ref. 5: V. G. Rayevskiy, S. S. Voyutskiy, Kauchuk i rezina, 1961, no. 3, 22) that the dependence of adhesion of rubber to fibrous polymers on vulcanization time was represented by a curve with a maximum. This correlation and its dependence on the type of bonds which may form a steric network in the case of vulcanization is to be explained in the present communication which constitutes the beginning of a series of studies. Mixtures of elastomers of different polarities

Card 1/ 4

Effect of various types of structure ...

(rubbers CKH-26 (SKN-26); CKC-30A (SKS-30A); CKI-30APM-15 (SKS-30ARM-15) and butyl rubber) with optimum vulcanizing additions (sulfur; mercapto benzothiazole; diphenyl guanidine; dibenzothiazole disulfide; tetramethyl thiuramdisulfide; zinc oxide; stearic acid; lamp black; Neozon D) were used for the experiments. Perlon TK 4 (PK-4) (polycaprolactam) and cellophane (hydrocellulose) foils were used as substrates. Production of samples and their vulcanization took place under conditions described in Ref 4. The curves (Fig. 1) were plotted from data of Ref 4 and from M_c values determined by the authors by swelling in benzene. In all cases investigated, specific adhesion decreased abruptly after a certain limit of structure formation had been reached. This limit is characterized by a M_c value and does practically not depend on the nature of the fibrous polymer in contact. It corresponds to the mean molecular weight of the chain section between two nodes of the steric network ($M_c \approx 6000$). The abrupt decrease of adhesion after reaching the limit of structure formation is caused by the occurrence of tensions in the contact zone as a consequence of the shrinkage of rubber during vulcanization, and on cooling after

Card 2/4

vulcanization. A maximum of adhesion occurs in all samples investigated and adhesion is the stronger, the thinner the rubber film because shrinkage tensions in the contact zone increase with increasing thickness of film. All experimental observations of this study fully agreed with the diffusion theory of adhesion. The stronger adhesion to Perfol as compared with cellophane is due to the extraordinary rigidity of molecular chains of cellulose, and to its high packing density which complicates the diffusion of elements of rubber molecules. The optimum degree of vulcanization, giving a maximum adhesion, can be utilized in the industry. Vulcanization conditions used at present for rubber fabric materials bring about a network with a molecular weight of M_c = 5000-5500. The minimum value of M_c where stability of the adhesive bond does not yet decrease lies, however, at 6000-6500 in the types of rubber investigated. Consequently, it is possible to increase considerably the bond strength of rubber fabric materials by lowering the vulcanization degree of rubber layers directly adhering to the fabric. A lower degree of vulcanization of these layers as compared with the degree of vulcanization of the bulk of rubber can be achieved without varying vulcanization conditions used

at present by lowering the content of vulcanizing groups in the rubber of these layers. There are 2 figures, 2 tables, and 9 Soviet references.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov), Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry)

SUBMITTED: January 9, 1961

Fig. 1. Effect of structure formation in vulcanization on adhesion of rubber coats to foils of fibrous polymers. Legend. Ordinate: adhesion, g/cm; abscissa, duration of vulcanization, min (lower scale); molecular weight M_c (upper scale); rubber coats: (6) СКС-30АРМ-15 (SKS-30ARM-15); (6') СКС-30А (SKS-30A); (7) СКН-26 (SKN-26); solid lines, to polycaprolactam (Perfol), dotted lines, to hydrate cellulose (cellophane)

Card 4/8 4

15.9300
11211

AUTHORS: Rayevskiy, V. C., Voyutskiy, S. S., Livanova, I. V.

TITLE: Effect of structuration of elastomers on their adhesion to fiber forming polymers. II. Effect of double bonds in molecular side groups of elastomers

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 3, 1962, 366-370

TEXT: The effect of vulcanization on the strength of branched elastomers able to bind sulfur to the double bond of vinyl side groups is studied. Rubbers on the basis of СКБ (SKB), СКБМ (SKBM), and СКД (SKD) polybutadiene rubbers containing vulcanization groups and 10 parts by volume of lampblack were calendered on polycaprolactam (Perfiol ПК-4 (PK-4)) and hydrate cellulose films. Vulcanization was conducted at 134°C and ≈0.85 kg/cm² on the drum vulcanizer "Berstorf". When the molecules contain vinyl side groups, sulfur and also oxygen may add and influence the adhesion of elastomers, which was determined according to ГОСТ 6768-53 (GOST 6768-53). Double bonds do not change the dependence of exfoliation

Effect of structuration of ...

1.1 kg/cm, that for SKBM is ~10 min, 1.0 kg/cm, since SKB contains a number of branches. The change in exfoliation character for SKB and SKBM is due to stronger adhesion with constant cohesion. The difference in time is explained by a higher rate of solidification of the adhesive bond and somewhat lower cohesional force of SKB. The dependence curve of the adhesion of SKB and SKBM rubber on the structuration degree (molecular weight M_c of the chain link), after vulcanization has a flatter drop than the corresponding curve for butyl rubber, butadiene styrene and butadiene acrylonitrile elastomers. In the vulcanization of butadiene elastomers, sulfur attaches to the double bonds of the principal and vinyl side chains, forming numerous sulfurous groups with intramolecular interaction, and also large, hardly mobile, cyclic sections. The diffusion rate therefore decreases at a M_c higher than that of elastomers with intermolecular sulfur addition only. The structuration degree depends on the number of links bound in the 1-2 position of elastomers. An increase in the number of links in the 1-2 position reduces the adhesive strength at higher M_c, increases the double bonds in the side groups and the $M_{c\ max}$, and decelerates the decrease in adhesive strength after maximum structuration. There are 4 figures.

Card 2/3

S/190/62/004/003/007/023
B110/B144

Effect of structuration of ...

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)
Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry)

SUBMITTED: February 20, 1961

Card 3/3

37434

S/190/62/004/005/010/026
B110/B144

15.9201
15.9300

AUTHORS: Rayevskiy, V. G., Voyutskiy, S. S., Livanova, I. V.

TITLE: Effect of the structuration of elastomers on their adhesion to fiber-forming polymers. III. Effect of the type of vulcanization of rubbers on the change in strength of the adhesion bond

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 5, 1962, 696-701

TEXT: The authors studied (1) the vulcanization of СКБ-35р (SKB-35r) sodium butadiene rubber with tetramethyl thiuram disulfide alone, and (2) the vulcanization of polychloroprene rubber in the additional presence of oxides of multivalent metals. The maximum strength of the adhesion bond was reached much earlier than with sulfur vulcanization. Examination of the structuration rate of the rubbers showed that the degree of structuration of the thiuram vulcanizate (I) in the first 20 min was higher than that of the sulfur vulcanizate (II). After long-time vulcanization it remained unchanged with I and increased with II.

Card 1/3

Effect of the structuration of ...

The maximum strength of the adhesion bond of I is lower since I diffuses less readily than II (II = 1050 g/cm; I = 480 g/cm). The maximum degree of structuration, after which the strength of the adhesion bond decreases, is: $M_{c\ max} \approx 50{,}000$ for II, and $M_{c\ max} \approx 65{,}000$ for I. This confirms the effect of the macromolecular bonds formed on vulcanization. The -C-C- and C-S-C bonds of I are more rigid than the $-C-S_n-C-$ bonds of II. The strength of bonds between rubber and fiber-forming polymers is thus reduced, and optimum adhesion is shifted toward a lower degree of structuration. Furthermore, the authors studied the effect of the vulcanization of rubber mixtures on the basis of polychloroprene rubber (nairit) with zinc and magnesium oxide on the change in strength of adhesion bonds between rubbers and fiber-forming polymers. The adhesion bond of polychloroprene elastomers with polycaprolactam and hydrate cellulose showed no change in the dependence of the strength of adhesion bonds on the vulcanization time by metal oxides. Here, too, the optimum occurred at a shorter vulcanization time than with II. Since the adhesion strength reached a maximum at $M_{c\ max}$ = 7-7500 and decreased

Card 2/3

Effect of the structuration of ...

subsequently, the type of vulcanization was found to have no effect with links bound in the 1,4 position. $M_{c\ max}$ does not depend on the type of bonds between macromolecules, but on the content in lateral vinyl groups. There are 5 figures and 1 table.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov); Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry)

SUBMITTED: March 31, 1961

Card 3/3

RAYEVSKIY, V.G.; VOYUTSKIY, S.S.; LIVANOVA, I.V.

Effect of the structuration of elastomers on their adhesion to fiber-forming polymers. Part 2: Effect od double bonds in side chain groups of molecules of elastomers. Vysokom.soed. 4 no.3:366-370 Mr '62. (MIRA 15:3)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova i Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Elastomers) (Adhesion) (Chemical bonds)

RAYEVSKIY, V.G.; VOYUTSKIY, S.S.; LIVANOVA, I.V.

Effect of structure-formation of elastomers on their adhesion to fiber-forming polymers. Part 3: Effect of the type of vulcanization of rubbers on the change in strength of the adhesion bond. Vysokom.soed. 4 no.5:696-701 My '62. (MIRA 15:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova i Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

(Vulcanization) (Adhesion)

RAYEVSKIY, V.G.; VOYUTSKIY, S.S.; LIVANOVA, I.V.; SHTEYNBERG, Z.D.

Effect of various types of elastomer structure formation on their adhesion to fiber-forming polymers. Part 1: Effect of sulfur vulcanization on the adhesion of rubbers to fiber-forming polymers. Vysokom.soed. 3 no.12:1827-2832 D '61. (MIRA 15:3)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V.Lomonosova i Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Rubber) (Vulcanization) (Adhesion)

L 51968-65 EWI(l)/EWT(m)/EPF(c)/EEC(t)/EWP(t)/EWP(b) Pi-4 IJP(c)
JD/WW/JG/GG

ACCESSION NR: AM5012586 UR/0181/65/007/005/1575/1577

AUTHOR: Antipin, A. A.; Kurkin, I. N.; Livanova, L. D.; Polyvorova, L. S.; Shekun, L. Ya.

TITLE: Paramagnetic resonance of trivalent samarium in single-crystal CaF_2

SOURCE: Fizika tverdogo tela, v. 7, no. 5, 1965, 1575-1577

TOPIC TAGS: paramagnetic resonance, trivalent samarium, electron paramagnetic resonance, paramagnetic center, g factor, hyperfine structure

ABSTRACT: In view of the fact that the EPR spectrum observed in samples of CaF_2:Sm prepared in the authors' laboratory differ greatly from that observed by others, a thorough study was made of these spectra. The samples were grown by the Bridgman method in an induction furnace using a graphite crucible. One sample was grown in a reducing medium and the other in an oxidizing medium. The spectra of both samples were the same, differing only in intensity. The angular dependence of the spectra corresponded to a tetragonal symmetry of the centers. A pronounced hyperfine structure was observed at wavelength ~ 3 cm. The values obtained for the parallel and perpendicular g-factors were 0.00 ± 0.06 and 0.823 ± 0.003, re-

Card 1/2

L 51968-65
ACCESSION NR: AP5012586

spectively. These values, as well as the calculated values of the resonant field for Sm^{3+} at 9293 Mc, are in excellent agreement with the theoretical calculations. The results leave no doubt that tetragonal centers of Sm^{3+} can be produced in the system CaF_2:Sm and that their magnetic properties differ strongly from those obtained by Weber and Bierig (Phys. Rev. v. 134A, 1492, 1964) and by Low (Phys. Rev. v. 134A, 1479, 1964), whose results call for additional investigations. Orig. art. has: 1 figure, 2 formulas, and 1 table. [02]

ASSOCIATION: Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina (Kazan' State University)

SUBMITTED: 25Dec64 ENCL: 00 SUB CODE: SS, NP

NO REF SOV: 002 OTHER: 008 ATD PRESS: 4009

mc
Card 2/2

L 18765-66

ACC NR: AP6003776 SOURCE CODE: UR/0181/66/008/001/0142/0147

AUTHORS: Gil'fanov, F. Z.; Livanova, L. D.; Stolov, A. L.

ORG: Kazan State University im. V. I. Ul'yanov-Lenin (Kazanskiy gosudarstvennyy universitet) 29 B

TITLE: Investigation of $CaF_2:Gd^{3+}$ centers with positive compensators

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 142-147

TOPIC TAGS: fluorite, gadolinium, activated crystal, optic spectrum, crystal symmetry, luminescence center, epr spectrum

ABSTRACT: The authors obtained experimentally the optical spectrum of Gd^{3+} centers in CaF_2 with rhombic symmetry, compensated with Na^+, K^+, and Ag^+ ions. The crystals were grown in an induction furnace by the Bridgman method. The luminescence and absorption spectra were excited with a high intensity lamp and recorded with a diffraction spectrograph (1200 lines/mm, dispersion 3 Å/mm). Introduction of the 2

Card 1/2

ACC NR: AP6003776

compensators gave rise to changes in the structure of the spectra, with suppression of the spectrum of the noncubic fluorine centers, intensification of the spectrum of the cubic centers, and simultaneous production of spectra of new centers, which differed somewhat for the different compensators. The results are compared with those deduced from EPR spectra. Replacement of two Ca^{2+} ions in the lattice of the fluorite with Gd^{3+} and compensator ions causes production of centers of cubic and rhombic field symmetry, with the parameters of the rhombic centers depending on the kind of compensator use. The spectroscopic data indicate that the compensator ion in rhombic centers is located in the third coordination sphere, and distorts relatively little the cubic field of the fluorite lattice. The causes of the easy replacement of the F^- centers in the lattice are briefly explained. The authors thank M. M. Zaripov and V. G. Stepanov for supplying data on the EPR spectra of the crystal and for discussing the results. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 06Jul65/ ORIG REF: 001/ OTH REF: 004

L 21400-66 EWT(m)/EWP(t) IJP(c) · JD/JG
ACC NR: AP6003795 SOURCE CODE: UR/0181/66/008/001/0238/0239

AUTHORS: Zaripov, M. M.; Livanova, L. D.; Stepanov, V. G.; Falin, M. L.

ORG: Kazan' State University im. V. I. Ul'yanov-Lenin (Kazanskiy gosudarstvennyy universitet)

TITLE: Electron paramagnetic resonance of Gd^{3+} in double molybdate of yttrium and lanthanum

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 238-239

TOPIC TAGS: yttrium compound, lanthanum compound, molybdenum containing alloy, gadolinium, epr spectrum, optic spectrum, rare earth element, line width, crystal symmetry, electron paramagnetic resonance

ABSTRACT: In view of the appreciable attention paid recently to the study of optical and EPR spectra of compounds of the type $M^{2+}M^{6+}O_4$ (M^{2+} = Ca, Sr, Ba, Pb; M^{6+} = Mo^{6+}, W^{6+}), alloyed with elements of the rare-earth group, the authors have grown and investigated by the

Card 1/3

L 21400-66

ACC NR: AP6003795

EPR method single crystals of $M^+Y(MoO_4)_2$ and $M^+La(MoO_4)_2$, where M^+ = Na, Li, and K with add mixture of 0.1 atomic per cent gadolinium. The crystals were grown by solution in the melt, in a programmed oven whose temperature could be set accurate to 1C in the limit 600 -- 1200C. The crystal growth procedure is briefly described. In all the crystals, including $KY(MoO_4)_2$, very broad absorption lines were observed, with the lines of the transition 1/2 -- 1/2 ($g \approx 1.99$) having a width of 200 Oe even for the field parallel to the z axis. The widths of the lines remain constant if the gadolinium concentration remains constant. The large width is attributed to the scatter of the axes of the local electric field acting on the magnetic ions. A distinct spectrum of the Gd^{3+} ions was observed in the $KY(MoO_4)_2$ single crystals. From the angular distribution of the EPR spectrum it is deduced that the structure $TY(MoO_4)_2$ has either monoclinic or rhombic syngony. The constants of the spin Hamiltonian has been evaluated and it is concluded from the near-equality of some of the constants for Gd^{3+} in crystals with scheelite structure, that the

Card 2/3

L 21400-66
ACC NR: AP6003795

nearest surrounding of Gd^{3+} ions in the $KY(MoO_4)_2$ are similar in structure in all these crystals. Orig. art. has: 1 formula

SUB CODE: 20/ SUB DATE: 12Jul65/ OTH REF: 002

Card 3/3 ULR

L 26743-66 EWT(1)/T IJP(c) JD/JG/GG

ACC NR: AP6011468 SOURCE CODE: UR/0070/66/011/002/0245/0250

53
B

AUTHOR: Gil'fanov, F. Z.; Livanova, L. D.; Stolov, A. L.

ORG: Kazan' State University (Kazanskiy gosudarstvennyy universitet)

TITLE: Investigation of optical centers in CaF_2 crystals activated with Gd^{3+}

SOURCE: Kristallografiya, v. 11, no. 2, 1966, 245-250

TOPIC TAGS: calcium fluoride, activated crystal, gadolinium, optic center, epr spectrum, luminescence, crystal growth, optic transition

ABSTRACT: This is a continuation of earlier work by the authors (Optika i spektroskopiya v. 20, 99, 1966) devoted to the spectrum of the Gd^{3+} ion isomorphously substituting the cation in the CaF_2 lattice, and to the effect of fluorine color centers. The present study is devoted to optical centers produced by introduction of oxygen atoms into the lattice together with the fluorine centers. It is shown that in addition to the trigonal oxygen centers, which have been previously observed by various workers, other optical centers are also produced, some of which either did not appear in EPR spectra at all, or appeared very weakly. The $CaF_2:Gd^{3+}$ crystals were grown in an induction furnace by the Bridgman method. The absorption and luminescence spectra were obtained at room temperature and at liquid-nitrogen temperature with a diffraction spectrograph (DFS-8-1, dispersion 6 Å/mm). The luminescence was excited by a high pressure xenon lamp. The crystal growth was in an oxidising temperature at

Card 1/2 UDC: 548.0: 535.3

L 26743-66

ACC NR: AP6011468

two different oxygen pressures. The results showed that three types of new centers are produced under these circumstances, two of which occur during the initial growth of the cyrstal and the third occurs at the end of the growth. The different transitions and energies ascribed to the different groups are identified by optical and EPR spectroscopy and tabulated. An analysis of these centers shows that they are either trigonal symmetry centers with oxygen compensation of the charge, or else constitute centers produced by the Gd^{3+} ions included in the CaO lattice. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 18Dec64/ ORIG REF: 006/ OTH REF: 002

Card 2/2

L 24280-66 EWT(m)/EWP(t) IJP(c) JD/JW/JG
ACC NR: AP6006999 SOURCE CODE: UR/0051/66/020/002/0283/0292

AUTHOR: Gil'fanov, F. Z.; Dobkina, Zh. S.; Stolov, A. L.; Livanova, L. D. 71 B

ORG: none

TITLE: Absorption and luminescence spectra of Gd^{3+} in MeF_2

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 283-292

TOPIC TAGS: absorption spectrum, luminescence spectrum, Stark effect, gadolinium, electron paramagnetic resonance, line width, luminescence center

ABSTRACT: The purpose of the investigation was to identify the terms and the Stark structure of the energy levels belonging to the ions Gd^{3+} in crystals of MeF_2 (Me = Cd, Ca, Ba) on the basis of analysis of the emission and absorption spectra of the Gd^{3+} in these crystals. The optical spectra were measured at temperatures 300 and 77K, using a spectrograph (DFS-8) with linear dispersion 6 Å/mm. The nature of the hosts of the Gd^{3+} ions and their approximate concentration were determined by an electron paramagnetic resonance method. The Stark structures of the $^6P_{7/2, 5/2}$ and $^6J_{7/2}$, belonging to Gd^{3+} ions in crystal fields of various symmetries, were identified. The results showed that both the luminescence and the absorption spectra of the Gd^{3+} have narrow lines in the ultraviolet region, with widths usually not exceeding 0.7 Å. The lines narrow down by a factor 2--3 times on cooling to liquid-nitrogen temperature. A large number of the lines and the variability of their relative intensity in different samples with different Gd^{3+} concentration point to the presence of several types of optical centers. Orig. art. has: 5 figures and 3 tables.

SUB CODE: 20/ SUBM DATE: 21Nov64/ ORIG REF: 007/ OTH REF: 005
Card 1/1 FV UDC: 535.34 + 535.37 : 546.662

L 36822-66 EWT(1)/EWT(m)/T/EWP(t)/ETI IJP(c) GG/AT/WW/JW/JD

ACC NR: AT6020039 (A) SOURCE CODE: UR/2564/65/005/000/0357/0360

60
57
B+1

AUTHOR: Livanova, L. D.

ORG: none

TITLE: The study of charge compensation in CaF_2 crystals by the electron paramagnetic resonance method (EPR)

SOURCE: AN SSSR, Institut kristallografii. Rost kristallov, v. 5, 1965, 357-360

TOPIC TAGS: electron paramagnetic resonance, crystal lattice defect, crystal structure analysis

ABSTRACT: The Gd^{3+} ions introduced in artificially grown CaF_2 fluorite crystals are in fields which are partially of cubic and partially of tetragonal symmetry. In both cases the compensation of the excess charge of Gd^{3+} substituting the Ca^{2+} ions is carried out by an additional fluorine ion. The present article gives an estimate by means of the electron paramagnetic resonance method of the absolute concentration of Gd^{3+} ions embedded in CaF_2 and located in fields of cubic and tetragonal symmetry as a function of the overall Gd^{3+} concentration within the crystal. Crystals with admixtures of Gd_2O_3 were grown in vacuum by Bridgeman's method in graphite crucibles at a rate of 15 mm/hr. The author presents the basic theory and the experimental results which show that with an accuracy not worse than 10-12%

Card 1/2

the electron paramagnetic resonance can be used to determine the concentration of the embedded paramagnetic centers. The accuracy of the method depends on such radiospectroscope parameters as the stability of the generator, the pass bands of the amplification chain, and the inhomogeneity of the alternating magnetic field. In case more than one symmetry of the crystalline field is possible, the ratio of the ions found in the fields of varying symmetry depends on the overall concentration of the embedded admixture. This pattern was observed even on a cubic aqueous crystal in which in the presence of tetragonal and rhombic symmetries of the crystalline field, the ratio of these symmetries also depends on the concentration of the embedded paramagnetic centers and the conditions of growth. The author thanks Professor S. A. Al'tshuler, Docent L. Ya. Shekun, and Engineer G. K. Chirkin for consultations and interest in the work. Orig. art. has: 5 formulas, 5 figures, and 1 table.

SUB CODE: 20/ SUBM DATE: 000/ ORIG REF: 002/ OTH REF: 003

L 42886-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6020383 (A) SOURCE CODE: UR/0192/66/007/001/0108/0109

AUTHOR: Livanova, L. D.

ORG: Kazan State University (Kazanskiy gosudarstvennyy universitet)

TITLE: Electron paramagnetic resonance of Nd^{3+} in $YK(MoO_4)_2$

SOURCE: Zhurnal strukturnoy khimii, v. 7, no. 1, 1966, 108-109

TOPIC TAGS: EPR spectrum, yttrium compound, potassium compound, molybdate, neodymium

ABSTRACT: ESR spectra of Nd^{3+} ions were studied in $YK(MoO_4)_2$ single crystals grown by the solution-in-melt method. A study of the angular dependence for the orientation $H \perp z$ showed that within the accuracy of the experimental error, $g_x = g_y = g_\perp$. Because of the imperfection of the crystals, the hyperfine structure of the Nd^{143} and Nd^{145} lines in the principal orientations did not show up distinctly; therefore, the measurements were made in an orientation such that H was parallel to the bisector of the angle between z_1 and z_2 and thus formed an angle of 22.5° with both z_1 and z_2. The spectrum was described by means of the usual spin Hamiltonian of axial symmetry. The following Hamiltonian parameters were found:

Card 1/2 UDC: 538.11

ACC NR: AP6020383

4

$g_{\parallel} = 3.480 \pm 0.005$
$g_{\perp} = 1.278 \pm 0.002$

$A^{143} = (355.1 \pm 4)\ 10^{-4}\ cm^{-1}$
$B^{143} = (130.5 \pm 1)\ 10^{-4}$
$A^{145} = (221.8 \pm 2)\ 10^{-4}$
$B^{145} = (81.5 \pm 1)\ 10^{-10}$.

It is hoped that when this investigation is extended to other rare earth ions, it will permit the determination of the nature of the magnetic centers in the lattice. In conclusion, the author thanks I. N. Kurkin, A. A. Antipin, and L. Z. Potvorov for the spectral measurements and L. Ya. Shekun for discussing the results.

SUB CODE: 20,07/SUBM DATE: 12Jul65/ ORIG REF: 001/ OTH REF: 006

Card 2/2

ACC NR: AP6018741 SOURCE CODE: UR/0057/66/036/006/1118/1120

AUTHOR: Antipin, A.A.; Kurkin, I.N.; Livanova, L.D.; Potvorova, L.Z.; Shekun, L.Ya.

ORG: Kaza n' State University im. V.I.Ul'yanov-Lenin (Kazanskiy gosudarstvennyy universitet)

TITLE: EPR in calcium, strontium, and barium fluoride crystals containing samarium

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 6, 1966, 1118-1120

TOPIC TAGS: EPR, calcium, strontium, barium, samarium, fluoride, single crystal, crystal growing, EPR spectrometry

ABSTRACT: The EPR spectra of CaF_2:Sm, SrF_2Sm, and BaF_2Sm crystals were investigated at 4.2 °K with an EPR spectrometer operating in the 3 and 10 cm wavelength regions. The crystals were grown under a variety of conditions, and both colorless crystals and crystals showing the characteristic tint due to the presence of Sm^{2+} ions were obtained. The only tetragonal Sm^{3+} centers observed in CaF_2:Sm were those with $g_{\parallel} = 0 \pm 0.6$ and $g_{\perp} = 0.823 \pm 0.003$. The tetragonal Sm^{3+} centers reported by M.J.Weber and R.W.Bierig (Phys.Rev., 134, No. 6A, 1492, 1964) and W. Lowe (Phys. Rev., 134, No. 6A, 1479, 1964) were not confirmed. In SrF_2:Sm there were observed tetragonal Sm^{3+} centers with $g_{\parallel} = 0 \pm 0.06$ and $g_{\perp} = 0.829 \pm 0.002$, and in the best samples it was possible to resolve the hyperfine structure due to the Sm isotopes. No resonances that could be ascribed to Sm^{3+} were observed in BaF_2:Sm, although many crystals grown under a wide variety of conditions were examined and resonances with g-factors as low as 0.2 or 0.3 would have

Card 1/2

ACC NR: AP6018741

been detected. It is suggested that the absence of Sm^{3+} EPR in BaF_2:Sm may be due to the Sm^{3+} centers having trigonal rather than tetragonal symmetry in that host: in a cubic field the ground state Γ_8 quartet contains a nonresonating Kramers doublet that could be depressed to ground position by distortion of the field along the C_3 axis. It is suggested that there may be trigonal Sm^{3+} centers in CaF_2:Sm and SrF_2Sm also. Orig. art. has: 2 formulas and 1 figure.

SUB CODE: 20 / SUBM DATE: 16Jul65 / ORIG. REF: 003 / OTH REF: 005

L 01820-67 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JW/JG

ACC NR: AP6030965 SOURCE CODE: UR/0181/66/008/009/2664/2667

AUTHOR: Antipin, A. A.; Kurkin, I. N.; Livanova, L. D.; Potvorova, L. Z.; Shekun, L. Ya.

ORG: Kazan State University im. V. I. Ul'yanov-Lenin (Kazanskiy gosudarstvennyy universitet)

TITLE: Investigation of paramagnetic centers of Er^{3+} in BaF_2 and SrF_2 single crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 9, 1966, 2664-2667

TOPIC TAGS: single crystal, impurity center, paramagnetic center, erbium, barium fluoride, strontium fluoride

ABSTRACT: The authors investigated SrF_2 and BaF_2 single crystals with a Er^{3+} impurity. More trigonal and less cubic Er^{3+} centers were detected in both single crystals. The dependence of the relative concentration of cubic and trigonal centers on the total concentration of Er^{3+} was traced for the BaF_2:Er sample. Orig. art. has: 1 formula and 2 tables. [Based on authors' abstract] [NT]

SUB CODE: 20/ SUBM DATE: 31Jan66/ ORIG REF: 003/ OTH REF: 005/

Card 1/1

ACC NR: AP7005879 SOURCE CODE: UR/0181/66/008/012/3680/3681

AUTHOR: Zaripov, M. M.; Kropotov, V. S.; Livanova, L. D.; Stolov, A. L.; Yakovleva, Zh. S.

ORG: Kazan' State University im. V. I. Ul'yanov-Lenin (Kazanskiy gosudarstvennyy universitet)

TITLE: EPR and optical spectrum of Cr^{3+} ions in MgF_2

SOURCE: Fizika tverdogo tela, v. 8, no. 12, 1966, 3680-3681

TOPIC TAGS: laser material, epr spectrum, luminescence spectrum, optic spectrum, magnesium compound, fluoride, activated crystal, chromium, crystal impurity, impurity center, impurity level

ABSTRACT: To check on the two types of EPR spectra observed in ZnF_2 activated with Cr^{3+}, the authors measured the luminescence spectrum of Cr^{3+} in single crystals of MgF_2 to which Li, Na, and Cu were introduced as additives. The crystals with lithium showed an EPR spectrum (at 9.3 GHz) with a line structure having 5, 7, and 3 components when the field was parallel to the z, x, and y axes, respectively. The luminescence spectrum of the same crystals had an intense band with maximum at 7860 Å, a weaker band at 6805 Å, and narrow lines at 7320 and 7620 Å. The levels corresponding to these lines are identified. In the case of the copper impurity, the same EPR and optical spectra were observed but with lower intensity. In addition, a more complicated EPR spectrum with new lines due to several centers is observed. In the crystals with Na impurity or those without any impurity, the EPR spectra observed in the

Card 1/2 UDC: none

ACC NR: AP7005879

crystals with lithium vanishes, and only the complicated EPR spectrum observed with copper is seen. The maximum at 6805 Å in the optical spectrum becomes stronger. The results do not lead to any unique conclusions other than that the excess Cr^{3+} charge is compensated by the Li, Na, or Cu in a nonlocal manner. Orig. art. has: 1 figure and 1 formula. [WA-14] [02]

SUB CODE: 20/ SUBM DATE: 28Jun66/ OTH REF: 002

Card 2/2

ACC NR: AP7005348 SOURCE CODE: UR/0181/67/009/001/0209/0214

AUTHOR: Zaripov, M. M.; Kropotov, V. S.; Livanova, L. D.; Stepanov, V. G.

ORG: Kazan' State University im. V. I. Ul'yanov (Lenin) (Kazanskiy gosudarstvennyy universitet)

TITLE: Electron paramagnetic resonance of vanadium and chromium in CaF_2

SOURCE: Fizika tverdogo tela, v. 9, no. 1, 1967, 209-214

TOPIC TAGS: calcium fluoride, electron paramagnetic resonance, paramagnetic ion, vanadium, chromium, crystal lattice structure

ABSTRACT: The purpose of the investigation was to determine the behavior of iron-group elements in crystals in which the ligand atoms form a cube or a tetrahedron, rather than the deformed octahedron characteristic of most crystals used for EPR research. To this end, CaF_2 crystals doped with V and Cr were grown under controlled conditions and their EPR spectra studied. No EPR spectra could be produced in the CaF_2, even at 4.2K, unless a small amount of PbF_2 (0.5 - 1.5 wt.%) was added. The optimum was 0.6 wt.%. A type-I EPR spectrum of vanadium was then observed at 77K. When the CaF_2 crystal was prepared in a fluoriding atmosphere (by burning teflon in the furnace), a type-II EPR spectrum of vanadium was observed at 77K. The same treatment was necessary to grow crystals with observable EPR spectrum of chromium. A formal analysis of the EPR spectra on the basis of the spin Hamiltonian is presented. The parameters of the spin Hamiltonians are determined. The type-I EPR

Card 1/2 UDC: none

ACC NR: AP7005348

spectrum is attributed to V^{++} ions, and the type-II spectrum to V^{+++} and Cr^{+++}. The results show that the ions V^{++} and Cr^{+++} are in the electric field of trigonal symmetry and those of V^{+++} in a field of cubic symmetry, which cannot be regarded as consisting of strong cubic and weak trigonal components. The trigonal component is related to the Jahn-Teller effect. The authors thank S. A. Al'tshuler and A. M. Prokhorov for a discussion of the results, and also L. K. Aminov and B. I. Kochelayev. Orig. art. has: 2 formulas. [02]

SUB CODE: 20/ SUBM DATE: 20Jun66/ ORIG REF: 002/ OTH REF: 005

ATD PRESS: 5116

Card 2/2

LIVANOVA, L.V. (Moskva)

Measles and its prevention. Med.sestra 18 no.8:17-21 Ag '59.
(MIRA 12:10)

(MEASLES--PREVENTION)

LIVANOVA, L. V. Cand Med Sci -- (diss) "Study of the Clinic and Pathogenesis of the Vaccinal Process in children Actively Immunized Against Measles," Moscow, 1960, 14 pp, 250 copies (Central Institute for the Advanced Training of Physicians) (KL, 47/60, 107)

LIVANOVA, L.V.; RYAZANTSEVA, N.Ye.

Clinical and virological parallels in measles. Vop. virus. 5 no.4: 457-462 Je-Ag '60. (MIRA 14:1)

1. Otdel detskikh infektsiy Instituta pediatrii AMN SSSR i Institut virusologii imeni D.I.Ivanovskogo AMN SSSR, Moskva.
(MEASLES)

NOSOV, S.D., prof.; LIVANOVA, L.V.

Use of antibiotics in measles. Sov.med. 24 no.12:81-86 D '60.
(MIRA 14:3)

1. Iz otdela ostrykh detskikh infektsiy Instituta pediatrii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof.O.D.Sokolova-Ponomareva) na baze Detskoy klinicheskoy bol'nitsy No.2 imeni Rusakova (glavnyy vrach - dotsent V.A.Krushkov).
(MEASLES) (ANTIBIOTICS)

LIVANOVA, L.V.

Study of the clinical reaction of children to the introduction of antimeasles vaccine preparations. Pediatriia 38 no.2:82-88 F '60. (MIRA 13:12)

(MEASLES)

LIVANOVA, N.B. Cand Biol Sci -- (diss) "Study of certain ~~characteristics~~ properties of phosphoproteins of the liver." Mos,1957. 16 pp 20 cm. (Inst of Biochemistry im N. Bakh, Acad Sci USSR). 110 copies. (KL, 23-57, 110).

LIVANOVA, N.B.

LIVANOVA, N.B.

Studying certain properties of liver phosphoproteins [with summary in English]. Biokhimiia 22 no.3:578-586 My-Je '57. (MIRA 10:11)

1. Institut biokhimii im. A.N.Bakha Akademii nauk SSSR, Moskva.
(LIVER, metabolism,
phosphoproteins, determ. (Rus))
(PROTEINS, metabolism,
phosphoproteins in liver, determ. (Rus))
(PHOSPHATES, metabolism,
same)

LIVANOVA, N. B.

"Investigation of Some Properties of Phosphorus Proteins of the Liver."

dissertation defended for the degree of Candidate of Biological Sciences at the Inst. ~~for Zoology~~ Biochem im A N. Bakh [Correction made after original source consulted. mcf]

Defense of Dissertation (Jan-Jul 1957)
Sect. of Biological Sciences
Vest. AN SSSR, 1957, v. 27, No. 12, pp. 115-117

LISOVSKAYA, N.P.; LIVANOVA, N.B.

Effect of certain pharmacological agents on respiration, adenosintriphosphoric acid concentration and phosphoprotein metabolism in slices of the cerebral cortex of rats. Biokhimiia 24 no.5: 799-810 S-O '59. (MIRA 13:2)

1. Institut biokhimii im. A.N. Bakha Akademii nauk SSSR, Moskva.
(CEREBRAL CORTEX pharmacol.)
(ADENYLPYROPHOSPHATE metab.)
(PROTEINS metab.)

LISOVSKAYA, Nina Petrovna; LIVANOVA, Natal'ya Borisovna; ENGEL'GARDT, V.A., akademik, otv.red.; LINEVICH, L.I., red.izd-va; DOROKHINA, I.N., tekhn.red.

[Phosphoproteins] Fosfoproteiny. Moskva, Izd-vo Akad.nauk SSSR, 1960. 110 p. (MIRA 13:7)
(Phosphoproteins)

LISOVSKAYA, N.P.; IVANOVA, G.V.; LIVANOVA, N.B.

Change in the phosphorus fractions during the acid hydrolysis of casein. Biokhimiia 27 no.3:407-411 My-Je '62. (MIRA 15:8)

1. Institute of Biochemistry, Academy of Sciences of the U.S.S.R, Moscow.

(HYDROLYSIS) (PHOSPHORUS) (CASEIN)

LIVANOVA, N.B.

Specificity of protein phosphokinase in the rat liver. Vop. med. khim. 8 no.4:429-431 Jl-Ag '62. (MIRA 17:11)

1. Institut biokhimii imeni Bakha AN SSSR, Moskva.

SILONOVA, G.V.; LISOVSKAYA, N.P.; LIVANOVA, N.B.

Vacuum-evaporation apparatus for rapid concentration of liquids.
Vop. med. khim. 10 no.4:434-435 Jl-Ag '64. (MIRA 18:4)

1. Institut biokhimii imeni Bakha AN SSSR, Moskva.

LIVANOVA, N.B.; LISOVSKAYA, N.P.; SILONOVA, G.V.

Study of the mechanism of activating action of adenylic acid on the phosphorylase B in rabbit muscles. Biokhimiia 29 no.5: 936-944 Jl-Ag '64. (MIRA 18:11)

1. Institut biokhimii imeni Bakha AN SSSR, Moskva.

LISOVSKAYA, N.P.; LIVANOVA, N.B.; SILONOVA, G.V.

Mechanism of the action of muscle phosphorylase [illegible]. Biokhimiia 29 no.6:1012-1019 N-D '64 (MIRA [illegible])

1. Institut biokhimii imeni A.N.Bakha AN SSSR, Moskva. Submitted December 31, 1963.

LIVANOVA, N.B.; PIKHEIGAS, V.Ya.; SHPIKITER, V.O.

Transformations of phosphorylase B in acid and alkaline media.
Dokl. AN SSSR 161 no.5:1222-1223 Ap '65. (MIRA 18:5)

1. Submitted July 3, 1964.

ARIYEVICH, A.M.; VIKHREVA, O.G.; TYUFILINA, O.V.; LIVANOVA, N.K.; BLUDOVA, N.M.; VATOLINA, V.M.; SHEKLAKOVA, A.A.; KEMENEVA, M.P.; VARDASHKINA, M.A.; SOROKINA, I.I.

New trends in the treatment of fungal diseases of the skin. Sov. med. 26 no.6:52-56 Je '62. (MIRA 15:11)

1. Iz mikologicheskogo otdela (zav. - prof. A.M.Ariyevich) TSentral'nogo kozhno-venerologicheskogo instituta i klinicheskoy kozhno-venerologicheskoy bol'nitsy imeni Korolenko, Moskva.
(DERMATOMYCOSIS) (GRISEOFULVIN) (FUNGICIDES)

ARIYEVICH, A.M.; VIKHREVA, O.G.; TYUFILINA, O.V.; LIVANOVA, N.K.; SHEKLAKOVA, A.A.; VATOLINA, V.M.; BLUDOVA, N.M.

Griseofulvin in the treatment of dermatomycoses. Antibiotiki 9 no.5:457-461 My '64. (MIRA 18:2)

1. Mikologicheskiy otdel (zav.- prof. A.M. Ariyevich) TSentral'nogo nauchno-issledovatel'skogo kozhno-venerologicheskogo instituta, Moskva.

LIVANOVA, O. V.

Burgsdorf, V. V., "Investigation of the Protection of Power Systems from Lighting" A. I. Gershengorn, M.P. Yemel'yanov, O.V. Livanova, A. I. Rogacheva, and Ye.S. Fedorov were reported to be associates of the laboratory. (Elektrichestvo, No. 2, 1949; Central Scientific Research Electrical Engineering Laboratory (TsNIEL), Ministry of Power Stations.

SO; W-27801, 14 Sept. 1953

LIVANOVA, O.V., inzh.

Self-starting of feed pumps in high pressure steam power plants.
Elek. sta. 29 no.2:60-64 F '58. (MIRA 11:3)
(Electric motors) (Steam power plants--Equipment and supplies)

LIVANOVA, O.V., inzh.

Starting characteristics and self-starting of feed pumps in superhigh-pressure state-owned electric power stations. Elek. sta. 29 no.10: 18-23 O '58. (MIRA 11:11)
(Pumping machinery)

LIVANOVA, O.V.; FELDMAN, M.L., inzh.; CHISTIKOV, A.P., inzh.

Joint coasting of turbogenerators and auxiliaries of electric power stations. Elek. sta. 30 no.2:43-49 F '59.
(MIRA 12:3)

(Electric power plants) (Turbogenerators)

LIVANOVA, O.V., KRIKUNCHIK, A.B., MAMIKONYANTS, L.G., SYROMYATNIKOV, I.A., ULITSKIY, M.S.

"Power supply systems and electric drive of auxiliaries for modern thermal power stations."

Report to be submitted for the 19th Biennial Session, Intl. Conf. on Large Electric Systems(CIGRE), Paris, France, 16-26 May '62.

KRIKUNCHIK, All-Union Scientific Research Planning Inst. of Thermoelectric Industry.
LIVANOVA, Central Scientific Research Elect. Engineering Lab.
MAMIKONTANTS, Central Scientific Research Planning Inst. of Thermoelectric Power Stations, USSR.
SYROMYATNIKOV, Power Engineering Dept., Electric Tech. and Communication, State Committee for Coordination of Scientific Reasearch.
ULITSKIY, State Trust for Organization and Rationalization of Regional Electric Power Station.

LIVANOVA, O.V.; SHATROVA, S.G.

Concerning the heating-up of the solid rotor of a synchronous motor during its starting. Elektrichestvo no.2:56-58 F '62.
(MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektroenergetiki.

(Electric motors, Synchronous)

LIVANOVA, O.V., inzh.

Study of the synchronous electric drive of a superhigh-pressure feed pump. Elek. sta. 32 no. 5:45-51 My '61. (MIRA 14:5)
(Pumping machinery—Electric driving)

LIVANOVA, O.V., kand. tekhn. nauk (Moskva); KOMISSAROVA, I.P., inzh. (Moskva)

Experimental study of the heating of a solid rotor of a synchronous motor during asynchronous start. Elektrichestvo no.2:74-75 F '65. (MIRA 18:3)

LIVANOVA, O.V., kand.tekhn.nauk; LOKSHIN, A.N., inzh.

Economic efficiency of hydraulic clutches for feed pump drives.
Elek. sta. 36 no.8:37-41 Ag '65.
(MIRA 18:8)

LIVANOVA, O.V., kand. tekhn. nauk; LINDORF, L.S., kand. tekhn. nauk; OKOLOVICH, M.N., kand. tekhn. nauk; POLEVAYA, I.V., kand. tekhn. nauk; POMOGAYEVA, S.G.

Effect of asynchronous motors on short-circuit currents in a system supplying self-needs of power plants. Elek. sta. 36 no.11:48-54 N '65. (MIRA 18:10)

ACC NR: AP7005098 SOURCE CODE: UR/0104/65/000/011/0040/0044

LIVANOVA, O. V. (Candidate of technical sciences); Klimovitskiy, V. D. (Engineer)

"Testing of Prototype Asynchronous Electric Motor ATD-8000-2"

Moscow, Elektricheskiye Stantsii, Number 11, November 66, pages 40-

Abstract: Until very recently the limiting power for a two-pole induction motor was considered about 4,000 kw. However, recently in USSR was built for the first time a 8,000-kw two-pole electric motor for feed-water pumps. According to available sources nowhere abroad have such motors been yet built.

The prototype motor ATD-2000-2 designed at the Siberian Scientific-Research Electrical Engineering Institute (SibNIETI) and built at "Sibelektrotyazhmash" Plant was installed as drive for extra-high pressure feed-water pump SVPE-320-550 of the 300-MW boiler at the Chevepovetskaya State Rayon Electric Station (GRES). The ATD-8000-2 motor (6000 v, 8000 kva, 900 a, 2,950 rpm) was connected to SVPE-320-550 pump (550 ton/hr, 320 kg/cm^2, 7,500 rpm) by a fluid clutch and step-up reduction gear.

Industrial test of this unique prototype motor were conducted at the Cherepovetskaya GRES to determine the operating, starting and heating characteristics.

Card 1/2 UDC: 621.313.333.00..4

0926 1612

ACC NR: AP7005098

The tests has shown that the ATD-8000-2 motor satisfies operating and starting requirements as prescribed by Technical Specifications GOST 183-55. Heating of motor was also within the prescribed limits./ Orig. art. has: 3 figures and 2 tables. [JPRS: 39, 183]

ORG: none

TOPIC TAGS: electric motor, electric engineering

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 001

Card 2/2

SHANIN, Yu.N.; UVAROV, B.S.; MESHCHERYAKOV, N.A.; STASYUNAS, V.P.; KARIMOVA T.V.; KIVIK, A.A.; KROKHALEV, Yu.S.; LIVANOVA, T.B.; LOPATIN, V.A.; LYUBICHEVA, Z.L.; SIPCHENKO, V.I.

Characteristics of the anesthesia and work of the anesthesiologist in surgery with artificial blood circulation. Grud.khir. 5 no.1:116-121 Ja-F'63. (MIRA 16:7)

1. Iz kafedry anesteziologii (nachal'nik - deystvitel'nyy chlen AMN SSSR prof. P.A.Kupriyanov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
(SURGERY, OPERATIVE) (BLOOD--CIRCULATION, ARTIFICIAL)

LIVANSKAYA, F.

Economic encyclopedia. Vop. ekon. no.4:160 Ap '62. (MIRA 15:4)
(Economics—Dictionaries)

LIVANSKAYA, F.V.

ABRAMOV, V.A.; ALEKSEYEV, A.M.; AL'TER, L.B.; ARAKELYAN, A.A.; BAKLANOV, G.I.; BASOVA, I.A.; BLYUMIN, I.G.; BOGOMOLOV, O.T.; BOR, M.Z.; BREGEL', E.Ya.; VEYTSMAN, N.R.; VIKENT'YEV, A.I.; GAL'TSOV, A.D.; GERTSOVSKAYA, B.R.; GLADKOV, I.A.; DVORKIN, I.N.; DRAGILEV, M.S.; YEFIMOV, A.N.; ZHAMIN, V.A.; ZHUK, I.N.; ZAMYATNIN, V.N.; IGNAT'YEV, D.I.; IL'IN, M.A.; IL'IN, S.S.; IOFFE, Ya.A.; KAYE, V.A.; KAMENITSER, S.Ye.; KATS, A.I.; KLIMOV, A.G.; KOZLOV, G.A.; KOLGANOV, M.V.; KONTOROVICH, V.G.; KRAYEV, M.A.; KRONROD, Ya.A.; LAKHMAN, I.L.; LIVANSKAYA, F.V.; LOGOVINSKAYA, R.L.; LYUBOSHITS, L.I.; MALYSH, A.I.; MENZHINSKIY, Ye.A.; MIKHAYLOVA, P.Ya.; MOISEYEV, M.I.; MOSKVIN, P.M.; NOTKIN, A.I.; PARTIGUL, S.P.; PERVUSHIN, S.P.; PETROV, A.I.; PETRUSHOV, A.M.; PODGORNOVA, V.M.; RABINOVICH, M.A.; RYVKIN, S.S.; RYNDINA, M.N.; SAKSAGANSKIY, T.D.; SAMSONOV, L.N.; SMEKHOV, B.M.; SOKOLIKHIN, S.I.; SOLLERTINSKAYA, Ye.I.; SUDARIKOV, A.A.; TATAR, S.K.; TERENT'YEV, P.V.; TYAGAY, Ye.Ya.; FEYGIN, Ya.G.; FIGURNOV, P.K.; FRUMKIN, A.B.; TSYRLIN, L.M.; SHAMBERG, V.M.; SHAPIRO, A.I.; SHCHENKOV, S.A.; EYDEL'MAN, B.I.; EKHIN, P.E.; MITROFANOVA, S., red.; TROYANOVSKAYA, N., tekhn.red.

[Concise dictionary of economics] Kratkii ekonomicheskii slovar'. Moskva, Gos.izd-vo polit.lit-ry, 1958. 391 p. (MIRA 11:7)
(Economics--Dictionaries)

KOLDOBSKIY, A.G.; MEDVEDEV, S.I.; PISKOPPEL', F.G.; YAKOBSON, M.G. Prinimali uchastiye: BERKHIN, I.B.; OSLIKOVSKAYA, Ye.S.; PEREKISLOVA, A.M.; LITVIN, V.M.; PARKHOMENKO, Ye.V.; STOTIK, A.M.; SHAPIRO, T.I.; STRUMILIN, S.G., akad., glav. red.; ALEKSENKO, G.V., red.; ANISIMOV, N.I., red.; VOLODARSKIY, L.M., red.; GERSHBERG, S.R., redaktor; red.; PETROV, A.I., red.; POSVYANSKIY, S.S., red.; BAZAROVA, G.V., kand. ekonom. nauk, starshiy nauchnyy red.; KISEL'MAN, S.M., starshiy nauchnyy red.; LIVANSKAYA, F.V., kand. ekonom. nauk, starshiy nauchnyy red.; GLAGOLEV, V.S., nauchnyy red.; NEDBAYEV, V.I., nauchnyy red.; TUMANOVA, N.L., nauchnyy red.; TOVMASYAN, M.E., red.; BLAGODARSKAYA, Ye.V., mladshiy red.; SHUSTROVA, V.M., mladshiy red.; ZENTSEL'SKAYA, Ch.A., tekhn. red.

[The economic life of the U.S.S.R.; chronicle of events and facts, 1917-1959] Ekonomicheskaia zhizn' SSSR; khronika sobytii i faktov 1917-1959. Glav. red. S.G.Strumilin. Chleny red. kollegii: Aleksenko i dr., Moskva, Gos. nauchn.izd-vo "Sovetskaia entsiklopediia," 1961. 779 p. (MIRA 14:10)

1. TSentral'naya nauchnaya sel'skokhozyaystvennaya biblioteka Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. Lenina (for Litvin, Parkhomenko, STOTIK, Shapiro).
(Russia--Economic conditions)

YEFIMOV, A.N., glav. red.; BACHURIN, A.V., red.; VOLODARSKIY, L.M., red.; GERSHBERG, S.R., red.; GINZBURG, S.Z., red.; DUNDUKOV, G.F., red.; KIRZHNER, D.M., red.; KLIMENKO, K.I., red.; KOMAROV, F.V., red.; KOROL'KOV, A.N., red.; KUYLOV, P.N., red.; LIVANSKAYA, F.V., red.; LOKSHIN, E.Yu., red.; OSTROVITYANOV, K.V., red.; POSVYANSKIY, S.S., red.; PRUDENSKIY, G.A., red.; RAZUMOV, N.A., red.; RUMYANTSEV, A.F., red.; TATUR, S.K., red.; SHUKHGAL'TER, L.Ya., red.; BAZAROVA, G.V., starshiy nauchnyy red., kand. ekon. nauk; KISEL'MAN, S.M., starshiy nauchnyy red.; GLAGOLEV, V.S., nauchnyy red.; TUMANOVA, N.L., nauchnyy red.; BLAGODARSKAYA, Ye.V., mlad. red.; SHUSTROVA, V.M., mladshiyy red.; GAYDUKOV, Yu.A., kand. ekon. nauk, red.; ZBARSKIY, M.I., red.; LOZOVOY, Ya.D., red.; SERGEYEV, A.V., dots., red.; KHEYFETS, L.M., kand. tekhn. nauk, red.; LYUBOVICH, Yu.O., kand. ekon. nauk, red.; SYSOYEV, P.V., red.; KOSTI, S.D., tekhn. red.

[Economic encyclopedia; industry and construction]Ekonomicheskaia entsiklopediia; promyshlennost' i stroitel'stvo. Chleny red. kollegii: A.V.Bachurin i dr. Moskva, Gos.nauchn. izd-vo "Sovetskaia entsiklopediia." Vol.1. A - M. 1962. 951 p. (MIRA 15:10)

(Russia--Industries--Dictionaries)
(Construction industry--Dictionaries)

VAYSBLAT, A.S.; DZHUMAMBAYEVA, A.A.; LIVANSKAYA, N.N.

Treatment of trachoma in Tajikistan with the new preparation dibiomycin. Antibiotiki 7 no.9:829-832 S '62. (MIRA 15:12)

1. Kafedra mikrobiologii (zav. - chlen-korrespondent AMN SSSR Z.V.Yermol'yeva) TSentral'nogo instituta usovershenstvovaniya vrachey i Respublikanskiy trakhomatoznyy dispanser Ministerstva zdravookhraneniya Tadzhikskoy SSR.
(TAJIKISTAN—CONJUNCTIVITIS, GRANULAR) (AUREOMYCIN)

LIVAR, MILAN

✓Polarographic properties of sodium salt of *N*-(*p*-chlorphenyl)diazothiourea. Milan Livaľ (Výskumný ústav agrochem. tech., Bratislava, Czech.). *Chem. Zvesti* 9, 533–40(1955).—The Na salt of *N*-(*p*-chlorphenyl)diazothiourea gave an anodic and a cathodic wave. The cathodic reduction was irreversible, and the limiting current had a diffusion character. The diffusion-current const. was detd. as $I = 3.56$, and the values for half-wave potentials were −850, −914, −1011 mv. at pH 7.71, 8.71, 9.71 at a concn. $4 \times 10^{-4}M$. The compn. of electrolyte was Sorensen borate buffer, 12% ethanol, and 0.037% gelatin. The stability of a prepn. "Muritan" used for extermination of rodents was tested by this method. Jan Micka

LIVAR, M.

5

Analytical rectification of technically pure trichlorobenzene and the isolation of pure isomers. M. [illegible] and Z. [illegible] Státní výzkumný ústav [illegible] [illegible]

[illegible]

... hexachlor... [illegible]

1.08 ... [illegible]

mers. By [illegible] were isolated. The 1,2,4 [illegible] isomer m. 52.5° and b. 220.6°, which indicates that the sepn. of 1,2,4 and 1,2,3 isomers can be done [illegible] by rectification.

Jan Micka

LIVARSKAYA, Ye.

Let's attain the high rank. Stroitel' 8 no.7:26 Jl '62.
(MIRA 15:8)

(Odessa--Painting, Industrial)

LIVARTOVSKIY, I. V., Candidate Phys-Math Sci (diss) -- "Some criteria for the stability of movements described by systems of differential equations with discontinuous right-hand portions". Moscow, 1959. 8 pp (Min Higher Educ USSR, Moscow Phys-Tech Inst), 170 copies (KL, No 26, 1959, 123)

Livartovskiy, I. V.

PHASE I BOOK EXPLOITATION SOV/3952

Moscow. Fiziko-tekhnicheskiy institut

Issledovaniya po mekhanike i prikladnoy matematike (Studies in Mechanics and Applied Mathematics) Moscow, Oborongiz, 1959. 282 p. (Series: Its Trudy, vyp. 3) 2,150 copies printed.

Sponsoring Agency: USSR. Ministerstvo vysshego obrazovaniya.

Ed.: K. Ya. Zaytseva, Engineer; Ed. of Publishing House: S. D. Antonova; Tech. Ed.: N. A. Pukhlikova; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for scientific workers, engineers, and senior students working in the appropriate fields of science and technology.

COVERAGE: The book, the third issue of the Proceedings of the Moskovskiy fiziko-tekhnicheskiy institut (Moscow Physical and Technical Institute), contains a number of articles. The first half of the book concerns hydroaerodynamical problems (motion of a heavy liquid, calculation of pressure distribution along a solid of revolution, surface waves, etc.). The second half of the book is devoted to the theoretical and experimental study of the deformation of media (design of a thin-walled spherical shell, plastic torsion, etc.) and to certain problems of applied mathematics. No personalities are mentioned. References are given after most of the articles.

Tirskiy, G. A. The Exact Solution for Heat Transfer Through a Disk Rotating in a Viscous Incompressible Liquid 85

Shcherbina, Yu.A. Designing a Temperature Profile for the Wake of a Badly Streamlined Burning Body 95

Kukudzhanov, V. N. Propagation of Cylindrical Impact Stress Waves in a Thin Plate Beyond the Yield Point 108

Kuznetsov, V. M. On the Effect of Gravity on Ejection During an Underground Explosion 121

Rabinovich, A. L. Approximate Method of Designing a Thin-Walled Spherical Shell 132

Geogdzhayev, V. O. Plastic Torsion of Anisotropic Rods 171

Shirko, I. V. Plastic-Elastic Bending of a Thin Plate Fastened Along Its Edge 180

Rabinovich, A. L., M. G. Shtarkov, Ye. I. Dmitriyeva. Certain Regularities in the Homogeneous Deformation of Strengthened Metals in the Case of Uniaxial Tension 194

Livartovskiy, I. V. Some Problems of Stability by Linear Approximation for Systems of Differential Equations With Discontinuous Nonperiodic Right Sides 247

Nechepurenko, M. I. Matrix Method in Structures and Some of Its Applications 264

Trenogin, V. A. Branching of the Solutions of Nonlinear Equations in the Analytic Case 276

AVAILABLE: Library of Congress

AC/vbo/fal
8-16-60

Card 4/4

LIVARTOVSKIY, I.V. (Moskva)

Stability of solutions of simultaneous differential equations with discontinuous right hand sides. Prikl. mat. i mekh. 23 no.3:598-603 My-Je '59. (MIRA 12:5)

1.Moskovskiy fiziko-tekhnicheskiy institut.
(Differential equations)

16(1)

AUTHOR: Livartovskiy, I.V. SOV/20-125-4-11/74

TITLE: Some Criteria of Stability for the Solutions of a System of Differential Equations With Discontinuous Right Sides (Nekotoryye kriterii ustoychivosti resheniya sistemy differentsial'nykh uravneniy s razryvnymi pravymi chastyami)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 4, pp 733-736 (USSR)

ABSTRACT: The author considers the system $\frac{dz}{dt} = f(z,t)$, where $f(z,t)$ are discontinuous, in general not periodic functions. By defining a linear approximation as in the papers of M.A.Ayzerman and F.R. Gantmakher [Ref 1,2] it is possible to investigate the stability of the solutions. The author obtains criteria of stability which generalize the well-known criteria of K.P. Persidskiy, O.Perron, and I.G.Malkin to the case of discontinuous right sides. The author introduces a generalized Lyapunov function and proves that such a function exists for the system of linear approximation. Five extensive theorems are formulated. There are 8 references, 6 of which are Soviet, and 2 German.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskiy institut (Moscow Physical-Technical Institute)

PRESENTED: December 18, 1958, by I.G.Petrovskiy, Academician
SUBMITTED: December 16, 1958

Card 1/1

LIVARTOVSKIY, I.V., kand.fiz.-matem.nauk

Theory of stability according to the linear approximation for discontinuous systems. Trudy MITI no.5:109-124 '60. (MIRA 13:10)
(Differential equations)

KARACHAROV, Konstantin Andreyevich; PILYUTIK, Anatoliy Grigor'yevich; LIVARTOVSKIY, I.V., red.; PLAKSHE, L.Yu., tekhn. red.

[Introduction to the technical theory of the stability of motion] Vvedenie v tekhnicheskuiu teoriiu ustoichivosti dvizheniia. Moskva, Fizmatgiz, 1962. 243 p. (MIRA 16:3)
(Motion)

ACCESSION NR: AP4018048 S/0140/64/000/001/0087/0095

AUTHOR: Livartovskiy, I. V.

TITLE: Generalization of Lyapunov's second method

SOURCE: IVUZ. Matematika, no. 1, 1964, 87-95

TOPIC TAGS: differential equation, Lyapunov method, stability, linear approximation, Lyapunov function, perturbation, nonlinear differential equation

ABSTRACT: In the classical investigations of Lyapunov, the problem of stability for the system of differential equations

$$\frac{dx}{dt} = \Phi(x, t),$$

with a continuous right hand term was reduced to the existence of functions (with a fixed sign) which change monotonically along integral curves. In this paper a Lyapunov function is determined which can be decreasing on one portion of an integral curve and increasing on another. The system of equations studied is:

Card 1/3

ACCESSION NR: AP4018048

$$\frac{dz}{dt} = f(z, t).$$

The function f(z,t) is real valued and defined in the (n+1)-dimensional space (z,t) inside a cylinder C, whose axis is the integral curve $z^0(t)$ for the unperturbed motion. A sequence of surfaces $F_\alpha(z,t) = 0$ is defined, dividing the cylinder C into regions H_α, intersecting the curve $z = z^0(t)$ at points M_α at times t_α satisfying $t_{\alpha+1} - t_\alpha \geq T > 0$ (T = constant). Conditions on these surfaces are given which insure the existence and uniqueness of a solution to the system of equations. This solution satisfies the initial conditions and depends continuously on them. With the aid of the Lyapunov functions, criteria for the stability of the unperturbed motion are given. Stability with respect to a linear approximation is discussed. The right hand side of the original equation is written

$$f(z, t) - f(z^0, t) = P(t)(z - z^0) + R(z, t),$$

where P(t) is a matrix continuous in each interval $t_\alpha \leq t \leq t_{\alpha+1}$ and bounded for $t \geq 0$, and R(z,t) is a nonlinear remainder which satisfies

$$|R(z, t)| < a|z - z^0| \quad (t > 0, a = \text{const}).$$

Card 2/3

ACCESSION NR: AP4018048

Under certain conditions the solution $z = z^0(t)$ of the original system is asymptotically stable if the constant a in the above inequality is sufficiently small. Orig. art. has: 52 equations.

ASSOCIATION: none

SUBMITTED: 090ct61 DATE ACQ: 18Mar64 ENCL: 00

SUB CODE: MM NO REF SOV: 004 OTHER: 001

Card 3/3

L 13488-66 EWT(d)/EWA(m)-2 IJP(c)

ACC NR: AP6001375 SOURCE CODE: UR/0376/65/001/009/1131/1139

AUTHOR: Livartovskiy, I. V.

ORG: All-Union Scientific Research Institute of Agricultural Machine Construction (Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya)

TITLE: Stability of discontinuous systems with almost reducible linear approximation

SOURCE: Differentsial'nyye uravneniya, v. 1, no. 9, 1965, 1131-1139

TOPIC TAGS: differential equation, stability

ABSTRACT: The system of differential equations

$$\frac{dx}{dt} = P(t)x, \qquad (1)$$

is considered where x is a column vector with coordinates x_i. $P(t) = \{p_{ik}(t)\}$ is a real matrix, continuous in each interval $t_\alpha \leq t \leq t_{\alpha+1}$, and bounded for $t \geq 0$, considering only discontinuous solutions $x = x(t)$. The foregoing satisfies this system inside each interval $t_\alpha \leq t \leq t_{\alpha+1}$ and have for $t = t_\alpha$ discontinuities defined by the formulae

$$x_\alpha^+ = S_\alpha x_\alpha^-, \qquad (2)$$

Card 1/2

L 13488-66

ACC NR: AP6001375

where $S_\alpha = \{(S_\alpha)_{ik}\}$ are real nonsingular matrices, and the indices "+" and "-" refer respectively to the values for $t = t_\alpha + 0$ and $t = t_\alpha - 0$. Theorems are proved on stability and instability of the above problem. Orig. art. has: 30 formulas.

SUB CODE: 12/ SUBM DATE: 13Mar65/ ORIG REF: 005

Card 2/2

LIVChAK, G. B. Cand Bio Sci — (diss) "Certain Ecologo-Physiological and Biochemical Characteristics of Artic Grounds," Leningrad, 1960, 15 pp, 240 copies (Institute of Physiology im Pavlov, AS USSR) (KL, 46/60, 124)

LIVCHAK, G.B.

Materials on ecophysiological characteristics of Arctic mammals.
Trudy Inst.biol.UFAN SSSR no.14:179-191 '60. (MIRA 14:6)
(Arctic regions—Field mice)
(Body temperature—Regulation)
(Liver—Glycogenic function)