

IVANENKO, D.; KURDGELAI DZE, D.

Remarks on the quantum theory of a nonlinear meson field. *Izv.vys.*
ucheb.zav.; fiz. no.3:109-121 '61. (MIRA 14:8)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Quantum field theory) (Mesons)

IVANENKO, D.; KURDGELAIÐZE, D.F.

Commutation function of a nonlinear meson field. Zhur. eksp. i
teor. fiz. 40 no.4:1072-1075 Ap '61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet.
(Mesons) (Electric fields)

S/885/62/000/000/032/035
D234/D308

AUTHOR: Kurdgelaidze, D. F.

TITLE: Kinetics of charge accumulation on the surface of a solid body moving in rarefied plasma

SOURCE: Akademiya nauk SSSR. Energeticheskiy institut. Fizicheskaya gazodinamika, teploobmen i termodinamika gazov vysokikh temperatur, Moscow, Izd-vo AN SSSR, 1962, 275-289

TEXT: The body is assumed to be spherical and conducting. The author formulates an integral equation for the accumulated charge

$$\theta(t) = \sum_{i=\pm} e_i \left\{ \frac{S}{4} \alpha_i \bar{N}_i^0 \sqrt{3kT_i/m_i} e^{-\beta_i t} \int_0^t e^{\beta_i \tau} \frac{e_i}{kT_i} \frac{\theta(\tau)}{R} dt + \right.$$

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Kinetics of charge ...

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$$+ \frac{I_1}{B_1} (1 - \exp[-B_1 t]) \} \quad (13)$$

and discusses in detail the cases of small velocities of the body

$$U \ll c_+ \ll c_- \ll c_0 \quad (16)$$

large velocities

$$U \gg c_- \gg c_+ \quad (17)$$

and intermediate velocities

$$c_- \gg U \gg c_+ \quad (22)$$

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Kinetics of charge ...

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where c_0 is the velocity of light in a vacuum, c_- and c_+ are mean velocities of electrons and ions. (13) can be solved by successive approximations using the expressions

$$|e\theta(t)/kT_{\pm}R| < 1 \quad (14)$$

as a small parameter. The author solves the equation in the first approximation and determines the maximum charge and the saturation time, also for the case of inhomogeneous plasma.

Card 3/3

IVANENKO, D.D.; KURDGELAIDZE, D.F.

Classification of elementary particles. Part 1. Izv.vys.ucheb.zav.;
fiz. no.3:153-165 '63. (MIRA 16:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

S/056/63/044/002/030/065
B102/B186

AUTHORS: Ivanonko, D. D., Kurdgelaidze, D. F.
 TITLE: Classification of elementary particles
 PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
 no. 2, 1963, 587-591

TEXT: The present paper represents a lecture read at a conference on theoretical problems at the OIYAI in May 1962. An attempt is made to classify the elementary particles and to calculate the mass spectrum of baryons, mesons and the resonance particles termed as "resonons". The calculations are made on the basis of Kurdgelaidze's nonlinear field theory (ZhETF, 38, 462, 1960) by applying the Lagrangian

$$\mathcal{L} = -\frac{1}{2} \left\{ (\bar{\psi} \gamma_{\mu} \frac{\partial \psi}{\partial x_{\mu}} - \frac{\partial \bar{\psi}}{\partial x_{\mu}} \gamma_{\mu} \psi) + l^{\beta} (\bar{\psi} \psi)^{\beta} \right\}, \text{ where } l \text{ is a nonlinear}$$

parameter and β the degree of nonlinearity. Charge, spin and field energy are calculated by using the total wave functions $\psi = \chi(s) \exp(ik_{\mu} x_{\mu})$,

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Classification of elementary ...

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B102/B106

$$\chi^*(s) \chi(s) = NL^3 \text{ (for } N = 1). \quad E_n = (k_0 L)^{\beta/(3\beta-4)} = \frac{1}{2} (4\pi \frac{n}{\beta})^{(3\beta-3)/(3\beta-4)},$$

$$L = \frac{2\pi}{\omega} n = \frac{2\pi n}{k_0 \beta}; \quad k_0 \text{ is the rest mass of the field per unit volume } L^3,$$

ω the frequency; for $\vec{k} = 0$ and $N = 1$, $\omega = \beta k_0$. When the resonances, characterized by the quantum number r , are considered, one obtains

$$E_{n_0+q} = E_{n_0} \left[1 + q/n_0 \right]^{(3\beta-3)/(3\beta-4)} \quad \text{and} \quad E_{n_0} = \frac{1}{2} (4\pi n_0/\beta)^{(3\beta-3)/(3\beta-4)},$$

where $q = p + r$ (p being the hyperon quantum number). Numerical calculations were made for $\beta = 7/2$. It is shown that the baryon masses as a function of q , ($E_g/E_n = f(q)$) or as a function of $J = (2r+1)/2$,

($E/E_n = f(J)$) lie on straight lines with almost the same inclination. In all cases the relation $E_n = 1+n/6$, where $n = 2q$, can be used to represent the empirical mass spectrum. The transitions are given by

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$$\begin{aligned} \omega_{p'-p; r'-r} &= E_{p', r'} - E_{p, r} = E_{\mu} \{ (7\theta' + 2q')^{15/13} - (7\theta + 2q)^{15/13} \} \approx \\ &\approx E_{\mu} \{ 7(\theta' - \theta) + 2(q' - q) \} = E_{\mu} (7\theta' + 2q'), \\ \theta' &\equiv \theta' - \theta, \quad q' \equiv q' - q, \quad q' \equiv p' + r', \quad p' \equiv p' - p, \quad r' \equiv r' - r, \end{aligned} \tag{5}$$

$$E_{\mu} \equiv E_{\mu} \cdot 7^{-15/13} \approx 0,106, \quad E_{\pi} \equiv 1/7 E_{\mu} \approx 0,147, \quad E_{n_s} \equiv E_{\mu} = 1.$$

($\beta = 7/2$) and the energy $E^{(J)} = E_{n_0} \left[\frac{5+2p}{7} + \frac{4}{7} J \right]^{15/13} \approx E_{\mu} (5 + 2p + 4J).$

The lepton group is obtained by setting $\theta = 0$ in Eqs. (5). There are 2 figures and 2 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: July 10, 1962 (initially)
November 1, 1962 (after revision)

Card 3/3

ACCESSION NR: AP4014440

S/0188/64/000/001/0011/0017

AUTHOR: Kurdgelaidze, D. F.

TITLE: Two-parameter nonlinear field theory

SOURCE: Moscow. Universitete. Vestnik. Seriya 3. Fiz. astron., no. 1, 1964, 11-17

TOPIC TAGS: field theory, nonlinear field theory, two parameter field theory, spinor field

ABSTRACT: The author previously has proposed a theory of a nonlinear spinor field involving one nonlinear parameter \mathcal{L} (ZhETF, 38, 462, 1960); this is called a one-parameter nonlinear field theory. The results are dependent not only on \mathcal{L} , but also on the integration volume L^3 . Certain shortcomings of the one-parameter theory have induced the author to formulate a two-parameter field theory. This theory has two nonlinear terms with the degrees of nonlinearity \mathcal{L} and \mathcal{B} . The stability condition is determined. It is shown that in a general case of the two-parameter theory the results are dependent on the three parameters \mathcal{L} , \mathcal{B} , L^3 . The stability condition determines one of these parameters through the other two. The theory thereby becomes similar to the one-parameter theory, but requires an additional assumption. If the volume L^3 is determined as indicated, another additional condition is required for determination of the second nonlinear parameter and determination of volume requires use of the assumption already made in the one-parameter theory. These

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ACCESSION NR: AP4014440

two possibilities are discussed. It is shown that the only difference from the one-parameter theory is a change in the length scale, which is insignificant due to the invariance of the theory. "The author wishes to thank D. Ivanenko for useful discussion of the problems involved in this study". Orig. art. has: 18 formulas.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet, Kafedra statisticheskoy fiziki i mekhaniki (Department of Statistical Physics and Mechanics, Moscow State University)

SUBMITTED: 21Dec62

DATE ACQ: 12Mar64

ENCL: 00

SUB CODE: PH

NO REF SOV: 004

OTHER: 001

Card

2/2

total properties of elementary particles must be taken into consideration when
constructing a theory of elementary particles, since it is not excluded that
a knowledge of particles and not antiparticles may be connected with

ACCESSION NR: AP5001857

L 22870-66 ENT(1)/ENT(m)/T GW

ACC NR: AP6012816

SOURCE CODE: UR/0388/65/001/004/0479/0482

AUTHOR: Ivanenko, D. D.; Kurdgelaidze, D. F.ORG: Department of Physics, Moscow University, (Fizicheskiy fakul'tet Moskovskogo universiteta)TITLE: A hypothesis concerning quark stars ^{19.65}

SOURCE: Astrofizika, v. 1, no. 4, 1965, 479-482

TOPIC TAGS: quark, barion, degenerated electronic gas, neutron star, barion star, quark star, degenerated hyperon gas, ultravioletic quark

ABSTRACT: ^{19.44.45} Quarks are hypothetical particles from which intensively interacting particles such as mesons, barions, and resonons are generated. The mass of quark is considerably greater than that of barions and their charge is a fraction of barion and electric charges. Quarks may be real particles, but they have not been observed. A compressed star contains degenerated electronic gas in which an "impression" of electrons into protons, disorganization of the nucleus, and transition to a neutron star take place. A further compression causes the transition to degenerated hyperon Fermi gas. Continued compression may result in the hypothetical particles' quarks. The transition of a barion star into a quark star occurs according to the formula

$$B \rightarrow Q_1 + Q_2 + Q_3$$

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L. 22870-66

ACC NR: AP6012816

where B denotes barions and Q_1 quarks. A series of formulas explain the possible transition and the exchange of kinetic energy between barions and quarks. The condition of equilibrium of quark density is determined by the Fermi equation for the boundary energies of barions and three quarks. Quarks can be nonrelativistic and ultrarelativistic. The latter case is associated with very high density for transition according to the formula, and it can occur only within some barion stars. A star with such a high central density can be in a quasi-stationary state. The transition of barions into quarks in a barion star is associated with a transformation of kinetic energy into the quark mass. Local fluctuations of the density of barions may cause a deficit of barions in the star, and an inverse process of transition of quarks into barions can occur with a deliverance of bulk kinetic energy. A rapid transition of quark star to barion star may be connected with an explosion. The authors express thanks to V. A. Ambartsumyan and G. S. Saakyan for valuable comments. Orig. art. has: 9 formulas.

[EG]

SUB CODE: 03/ SUBM DATE: 17Jul65/ ORIG REF: 003/ OTH REF: 001/ ATD PRESS:

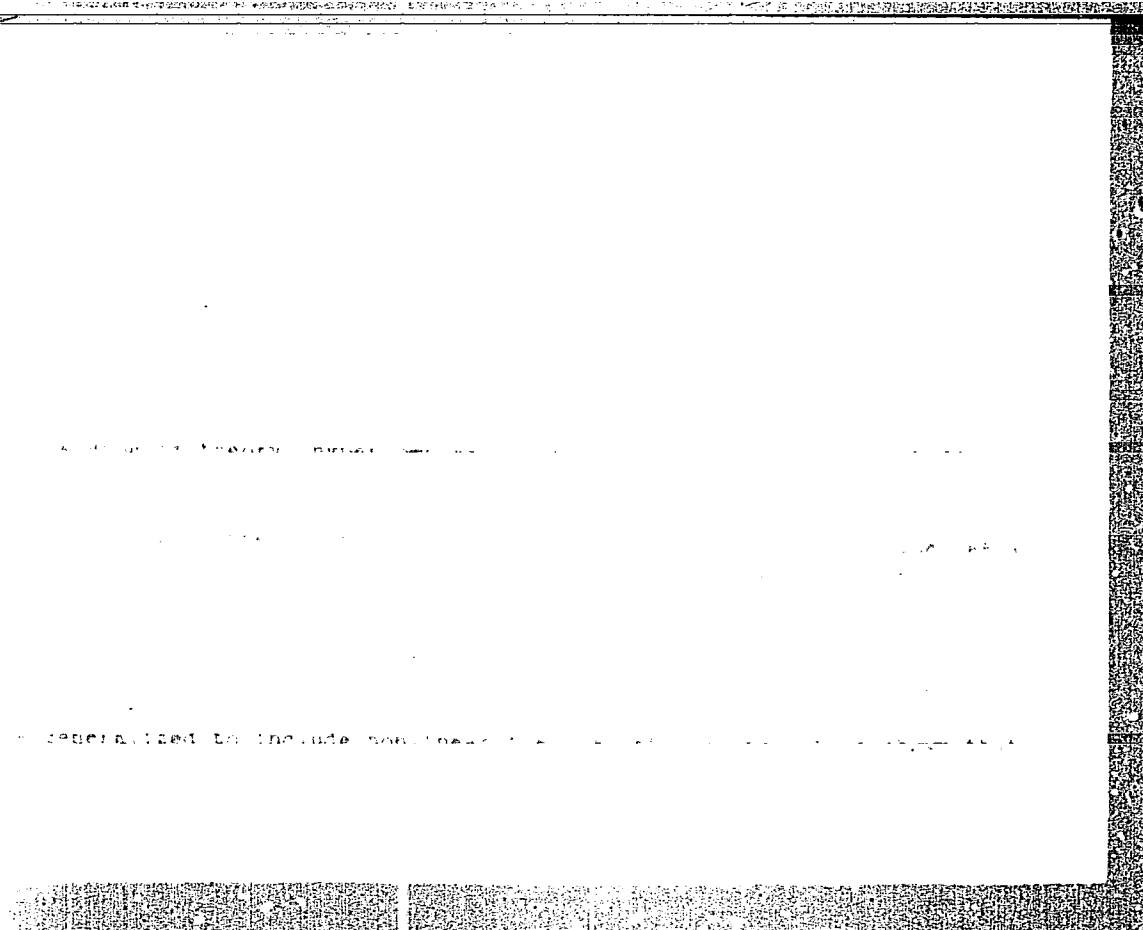
4234

Card 2/2 LC

KURDGELAI DZE, D.F.

Confluence theory on the basis of hypercomplex numbers. Vest.
Mosk. un. Ser. 3: Fiz., astron. 20 no.1:17-25 Jan.F '65.

1. Kafedra teoreticheskoy fiziki Moskovskogo universiteta. (MIRA 18:3)



"APPROVED FOR RELEASE: 08/23/2000

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APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000927630002-2"

TSERETELI, D.; INASHVILI, Sh.; KALANDADZE, G.; KURDGELAI DZE, G.;
LASHKHI, T.; LOMTATIDZE, G.; KHAZARADZE, R.

Observations of the Chalaati and Lekhyri glaciers in the
summer of 1959. Trudy Inst. geog. AN Gruz. SSR 17:223-256 '62.
(MIRA 16:7)

(Inguri Valley---Glaciers)

Kurdge Lashvili, M.V.

USSR Chemical Technology, Chemical Products
and Their Application

Fermentation industry

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32919

Author : Beridze G.I., Kurdgelashvili M.V.

Title : Effect of Ionizing Gamma-Radiation on Quality
of Wine

Orig Pub: Vinodeliye i vinogradarstvo SSSR, 1956, No 7,
8-13

Abstract: A study of the nature of changes in the quality
of wine by the action of ionizing radiation. It
was found that gamma-irradiation alters the
chemical composition and the organoleptic charac-
teristics of wine. The greater the dosage of
gamma-radiation the more pronounced are the

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USSR /Chemical Technology. Chemical Products
and Their Application

I-31

Fermentation industry

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32919

changes. Coloration of the wine is changed and a mousy aftertaste develops. Doses of 10-50 thousand rep result in organoleptic disharmony. Some 2-3 months after the irradiation the characteristic properties of the wine are restored. The wine becomes lighter and well bodied, valuable aromatic properties develop.

Card 2/2

KURDGELASHVILI, M. V., SIRBILADZE, M. C., and BERIDZE, G. I. (USSR)

"Changes in the Amino Acid Composition of Various Types of Wines
under the Influence of Radioactive Cobalt."

Report Presented at the 5th International Biochemistry Congress,
Moscow, 10-16 Aug 1961

MECHITOV, I.I.; KURDGELASHVILI, N.G.

Water balance of the Alazani River Basin. Trudy Inst. energ.
AN Gruz. SSR 17:105-114 '63. (MIRA 17:7)

KHUNDADZE, G.R., prof.; KURDGELIYA, R.I., aspirant

Some aspects of the application of controlled hypotension in
surgery. Khirurgiia 37 no.4:49-53 '61. (MIRA 14:4)

1. Iz kafedry anesthesiologii (zav. - prof. G.R. Khundadze)
Tiblisskogo instituta usovershenstvovaniya vrachey.
(HYPOTENSION)

OTKHMEZURI, V.P.; KURDGELIYA, R.I.

Clinical aspect and treatment of acute peritonitis in old age.
Trudy Tbil. GIDUV 6:239-245 '62. (MIRA 16:2)
(PERITONITIS) (AGED—DISEASES)

KURDGELIYA, R.I.

Use of artificial hypotonia in surgery. Trudy Tbil. GIDUV 6:
339-341 '62. (MIRA 16:2)
(HYPOTENSION) (SURGERY, OPERATIVE)

KURDGELIYA, R.I., aspirant (Tbilisi)

Use of ganglionic blocking preparations in surgery for thyrotoxic goiter. Probl.endok.i gorm. no.4:79-82 '62. (MIRA 15:11)

1. Iz kafedry anestezologii (zav. - prof. G.R. Khundadze) Tbilis-
skogo gosudarstvennogo instituta usovershenstvovaniya vrachey.
(GOITER) (AUTONOMIC DRUGS)

KURDI, Istvan, erdomernok

Present possibilities for increasing timber production on the
Great Hungarian Plain. Erdo 13 no.8:337-339 Ag '64

1. Szolnok County State Forestry, Szolnok.

KURDIANI, E.G.

KURDIANI, E.G., dotsent

Result of the treatment of diaphyseal fractures of the femur
with intramedullary fixation. Khirurgiia no.4:43-47 Ap '54.
(MLRA 7:6)

1. Zav. travmatologicheskim otdeleniyem Tbilisskogo nauchno-
issledovatel'skogo instituta ortopedii (dir. kandidat meditsin-
skikh nauk B.Sh. Tsereteli)

(HIP, fractures,

*surg., intramedullary nailing)

(FRACTURES,

*hip, intramedullary nailing)

KURDIANI, E.G., dotsent (Tbilisi, ul. Barnova, d.44-a)

Nonreduced congenital luxations of the hip, unstable and false
reductions in young children. Ortop., travm.i protez. 23
no.5:52-55 My '62. (MIRA 15:11)

1. Iz otdeleniya detskoy ortopedii (zav. - dotsent E.G. Kurdiani)
Tbilisskogo instituta travmatologii i ortopedii (dir. - dotsent
G.G. Tatishvili).

(HIP JOINT—DISLOCATION)

NEFEDOV, A.A., kand.tekhn.nauk; CHERNETA, A.P., inzh.; DZIGVASHVILI, G.A.,
inzh.; ZASLAVSKIY, B.M., inzh.; KURDIANI, G.P., inzh.

Internal ruptures in low-carbon steel pipe billets. Stal' 23
no.5:441-442 My '63. (MIRA 16:5)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz i Zakavkazskiy
metallurgicheskiy zavod.
(Rolling (Metalwork)) (Steel ingots--Defects)

POTEMKIN, P.S.; SHUMILIN, A.A.; KURDIANI, G.P.; KHAZARADZE, M.I.;
TYRTYSHNYY, A.Ye.

Firing Dankov dolomites in rotary kilns. Ogneupory 28 no.9:
389-392 '63. (MIRA 16:10)

1. Vsesoyuznyy institut ogneuporov (for Potemkin, Shumilin).
2. Rustavskiy metallurgicheskiy zavod (for Kurdiani, Khazaradze).
3. Dankovskiy dolomitovyy kombinat (for Tyrtysnyy).

KURDIANI, G.P.; NOZADZE, A.D.; RAMISHVILI, Sh.D.

Determination of the contact area during rolling in roll grooves
on a tube billet mill no.900/750. Soob. AN Gruz. SSR 35 no.3:635-
640 S '64. (MIRA 17:11)

1. Institut metallurgii AN GruzSSR, Tbilisi. Predstavleno akade-
mikom F.N. Tavadze.

GRISHKOV, A.I., kand. tekhn. nauk; KURDIANI, G.P.; NOZADZE, A.D.

Reviews and bibliography. Stal' 25 no.3:255-256 Mr '65.

(MIRA 18:4)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P.Bardina (for Grishkov). 2. Rustavskiy metallurgicheskiy zavod i Institut metallurgii Gruzinskoy SSR (for Kurdiani, Nozadze).

KUPCHEN, G.P.; BROVIN, H.Ya.; KOVACS, C.D.; SAMUEL, Sh.I.

Methods of calculating the parameters of force and power in
rolling in drawing grooves. *Sob. AN SSSR* 36 no.3:633-640
D 164. (MIRA 18:3)

1. Grazinskiy institut metallurgii. Submitted April 14, 1964.

KURDIANI, G.P.; ADAMIYA, R.Sh.; NOZADZE, A.D.; RAMISHVILI, Sh.D.

Using the method of electronic simulation in investigating torque distribution on spindles. Soob. AN Gruz. SSR 39 no.1: 137-143 J1 '65. (MIRA 18:10)

1. Gruzinskiy metallurgicheskiy institut. Submitted January 1, 1965.

KURDIANI, I.G.

Theory of the alcohol psychrometer. Soob.AN Gruz.SSR 9 no.2:
107-114 '48. (MIRA 9:7)

I.Tbilisskiy gosudarstvennyy universitet imeni Stalina. Predstav-
leno deystvitel'nyy chlenom Akademii A.I.Didebulidze.
(Hygrometry)

KURDIANI, I. G.

Kurdiani, I. G. - "On errors in determining the moisture content of the air by August's psychometric formula", Soobshch. Akad. nauk Gruz. SSR, 1948, Nos. 9-10, p. 555-59, - Bibliog: 5 items.

SO: U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

USSR/Meteorology - Humidity

Nov/Dec 50

"Concerning Possible Relative Humidity Minima," I.
G. Kurdiani

"Iz v-s Geograf Obshch" Vol LXXXII, No 2, pp 620-622

Attempts to prove very low values of relative humidity which are sometimes measured, e.g., the 1% measured by Przheval'skiy in southeast Mongolia 29 Mar 1872 and the 0% found by Rethly in Ankara 9 May and 30 Sep 1926, are not reliable. Shows curve for relative humidity is asymptotic with respect to the abscissa (values of $t - \tau$, where tau is the dew point and air temp t is assumed const) and therefore humidity of 0% is impossible.

175T63

1. FURDYANI, I. G.
2. USSR (600)
4. Hygrometry
7. Psychrometric method of determining dew point, Soob. AN Gruz. SSR 12 No. 8, 1951.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

KUPCHENKO, I. G.

"A Nomographic Method to Compile Psychometric Tables," *Izv. Vuzov. Av. Grupa SR*, 14, No 7, pp 399-405, 1953

The suggested nomogram is based on an empirical formula by Magnus expressing the ratio of elasticity of saturated water vapor to temperature. A deduced expression, relating relative humidity to temperature difference of dry and moist air, is used for construction of this nomogram. The nomogram facilitates humidity determination within the range of $+10$ to -5°C . (*RZhFiz*, No 6, 1955)

Sum. No. 681, 7 Oct 55

Inst. Geophys. AS GeosSR, Tbilisi

KURDIANI, I.G.

On the problem of ventilating a standard psychrometrical box.
Soob. AN Gruz. SSR 15 no. 4: 215-218 '54. (MIRA 8:5)

1. Akademiya nauk Gruzinskoy SSR, Institut geofiziki, Tbilisi.
Predstavleno deystvitel'nyy chlenom Akademii A.N. Dzhavakhishvili.
(Hygrometry)

KURDIANI, I.G.

Centennial variations in the climate of Georgia [in Georgian
with summary in Russian], Trudy Inst.geofiz. AN Gruz.SSR
15:217-231 '56.

(Georgia--Climate)

(MIRA 10:7)

69825

SCV/169-59-2-1740

Translation from: Referativnyy zhurnal, Geofizika, 1959, Nr 2, p 114 (USSR)

3 5000

AUTHOR: Kurdiani, I.G.

TITLE: Investigation of the Kinematic and Energetic Elements of the Thermal Convection as Bases of the Development of the Thunder Activity in the Earth Atmosphere

PERIODICAL: Tr. In-ta geofiz. AS GruzSSR, 1957, Vol 16, pp 245 - 267

ABSTRACT: The thermal convection developing in the atmosphere under the influence of temperature gradients arising between the particles moving upward and the surrounding air, is treated. The kinematic characteristics of an air particle moving in vertical direction, obtained earlier by A.F. Debyuk (Meteorol. i gidrologiya, Informatsionnyy sbornik, 1946, Nr 6) are generalized for the case of an initial heating of the particle relatively to the surrounding medium at the same level. The solutions of the linear nonhomogeneous differential equation for the vertical motion without friction and, moreover, taking into account the friction caused by the initial heating of the particle relatively to the surrounding air and by the character of stratification for the cases $\gamma \leq \alpha$, are investigated

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SOV/169-59-2-1740

Investigation of the Kinematic and Energetic Elements of the Thermal Convection as
Bases of the Development of the Thunder Activity in the Earth Atmosphere

(α and γ are the real and the dry adiabatic gradient of the air temperature).
Particular examples of the computations of the ascent time of the particle, the ascent
altitude, and the vertical velocity for a given initial velocity of the particle, the
temperature of the particle, and the temperature of the surrounding air are given. The
expressions for the kinematic elements of the motion are used for obtaining computational
formulae for the energy of instability as a function of time. By means of the proposed
method, the energy of instability can be computed for individual layers depending not
only on the distribution of α and γ , but also on the vertical velocity of the motion
of the particle.

G.P. Kurbatkin

X

Card 2/2

KURDIANI, I.G.

Sectorial velocities of pilot balloons traveling in space. Soob.
AN Gruz. SSR 19 no.6:677-683 D '57. (MIRA 11:6)

1. Tbilisskiy gosudarstvennyy universitet imeni Stalina. Predstavleno
akademikom Ye.K. Kharadze.

(Balloons, Pilot)

KURDIANI, I. G.

Kvaratskheliya, I. F., Tsutskiridze, A. Ya., and Kurdiani, I. G.
(State University Tbilissi), "The Results of Works in the field of the
Aeroclimatic Characteristic of the Free Atmosphere, on the Analytical
Method of the Treatment of Observations with Pilot Balloons and Distribution
of Clouds in Georgia."

Report presented at the Scientific Session of Tbilisi Scientific Research
Institute for Hydrometeorology, May 1957. (Meteorologiya i Gidrologiya,
No. 1, 1958.)

KURDIANI, I.G.

Errors in pilot balloon observations. Trudy Inst.geofiz.AN
Gruz.SSR 17:469-505 '58. (MIRA 13:4)

1. Tbilisskiy gosudarstvennyy universitet im.I.V.Stalina.
(Ballons, Pilot) (Errors, Theory of)

KURDIANI, I.G.

Theory of pilot balloon observations made with an theodolite.
Seob. AN Gruz.SSR 20 no.5:533-539 My '58. (MIA 11:10)

1. Tbilisskiy gosudarstvennyy universitet im. Stalina. Predstavleno
akademikom Ye.K. Kharadze.

(Balloons, Pilot)

KURDIANI, I.G.

Analytical method of working up pilot balloon observations. Trudy
Inst. geofiz. AN Gruz. SSR 18:267-308 '60. (MIRA 13:10)
(Balloons, Pilot)

KURDIANI, Iosif Georgiyevich

[Aerology] [Aerologia. Tbilisi, TSodna] 1964. 251 p.
[In Georgian] (MIRA 18:7)

KURDIANI, I.R.; BUKHNIKASHVILI, A.V.

Anatolii Georgievich Balabuev; on his 70th birthday and 45th anniversary of his scientific and pedagogical activities. Trudy Inst. geofiz. AN Gruz. SSR 19:265-267 '60. (MIRA 14:9)
(Balabuev, Anatolii Georplevich, 1889-)

АЛЕКСАНДР, А.И.

Engineers; Didebulidze, Aleksandr Iosifovich,
1882-1951

A.I.Didebulidze; on the occasion of the anniversary
of his death. Elektrichestvo No. 4, 1952.

SO: Monthly List of Russian Accessions, Library of Congress, August 1952 ~~1953~~, Uncl.

Handwritten: 1. Tbiliskiy filial Vsesoyuznogo Instituta elektrifikatsii sel'skogo khozyaystva

KURDIANI, I.S., kandidat tekhnicheskikh nauk; RUKHVADZE, Ye.M., inzhener

Generalization of experience in using the two-wire--earth system in Georgia. Nauch.trudy VIESKH no.1:5-21 '54. (MLRA 8:11)

1. Tbiliskiy filial Vsesoyuznogo Instituta elektrifikatsii sel'skogo khozyaystva
(Georgia--Electric power distribution)

KURDIANI, I.S., dotsent, kandidat tekhnicheskikh nauk; KHOMERIKI, O.K.,
Inzhener.

Operation of a three-phase rectifier fed by a transformer current.
Elektrichestvo no.3:66-71 Mr '54. (MLRA 7:4)

1. Tbilisskiy filial Vsesoyuznogo nauchno-issledovatel'skogo insti-
tuta elektrifikatsii sel'skogo khozyaystva.
(Electric current rectifiers)

KURDIAN, I.S.

F. 10/11/68

KU... 5

641. Automatic self-synchronization of hydrogen
return with sleep-waiting characteristics. 1-5
KURDANI V. I. SAKHIN...
1964

KURDIANI, I.S., inzhener; RUKHVADZE, Ye.M., inzhener.

Expanding the field of application for alternating current, Elek.sta.
25 no.5:44-46 My '54. (MLRA 7:6)
(Electric currents, Alternating)

KURDIANI, I.S.

Automatic rural hydroelectric power station. Biul. nauch.-tekhn.
inform. po elek. sel'khoz. no.1:38-39 '56. (MLBA 10:9)
(Hydroelectric power stations)

SOV/112-57-6-13143

Translation from: Referativnyy zhurnal. Elektrotehnika, 1957, Nr 6, p 212 (USSR)

AUTHOR: Kurdiani, I. S., Khomeriki, O. K.

TITLE: Asymmetrical Operating Conditions of a Three-Phase Rectifier Supplied by a Sinusoidal-Waveshape Source (Nesimmetrichnyy rezhim raboty trekhfaznogo vypryamitelya, pitayushchegosya ot istochnika sinusoidal'nogo toka)

PERIODICAL: Tr. Gruz. politekhn. in-ta, 1956, Nr 2 (43), pp 91-98

ABSTRACT: An analysis is presented of the operation of a three-phase bridge rectifier circuit supplied by a sinusoidal-waveshape source under asymmetrical conditions. To solve the above problem, a grapho-analytical calculation method was used, as the classical method of symmetrical components would be unjustifiably cumbersome and less demonstrable because of the nonlinearity and switching conditions of the rectifying-bridge operation involved. The degree of the current asymmetry of a three-phase system is determined as a ratio of the negative-to-positive phase-sequence components

$$\lambda = \frac{I_2}{I_1}, \text{ where } I_1 \text{ is the RMS}$$

Card 1/2

SOV/112-57-6-13143

Asymmetrical Operating Conditions of a Three-Phase Rectifier Supplied by a

value of positive-phase-sequence current, I_2 is the RMS value of negative-phase-sequence current. The above factor λ and the angle σ between the vectors of positive and negative phase-sequence currents can serve for single-valued determination of an asymmetrical set of currents. Curves are presented for determining the rectified-current mean values on the basis of λ and σ . Analytical expressions are presented for phase-to-phase voltage, as well as oscillograms of voltages and currents for certain conditions. The results of the above analysis can find practical applications in investigations of asymmetrical operating conditions of synchronous generators with a compounding scheme, in an investigation of a relay protective system that has an AC control circuit and is often called to operate under asymmetrical short-circuit conditions. Bibliography: 3 items.

I. L. R.

Card 2/2

KURDIANI, I.S., kandidat tekhnicheskikh nauk, dotsent; KHOMERIKI, O.K.,
kandidat tekhnicheskikh nauk.

Aspects of the operation of a compounding arrangement for
synchronous generators. Elektrichestvo no.11:62-64 N '56.
(MLRA 9:12)

(Electric current rectifiers) (Electric generators)

4

8 (0)

AUTHORS:

Ananiashvili, G. D., Gabashvili, N. V., SOV/105-59-11-31/32
Gortinskiy, S. M., Kurdiani, I. S., Mimikonyants, L. G.,
Syromyatnikov, I. A., Ter-Khachaturov, A. Ya., Chkheidzo,
D. N., Ebin, L. Ye.

TITLE:

Ye. M. Rukhvadze (Deceased)

PERIODICAL:

Elektrichestvo, 1959, Nr 11, p 95 (USSR)

ABSTRACT:

Yegor Mikhaylovich Rukhvadze died on August 9, 1959, 45 years old. After having completed his studies at the elektrotekhnicheskiy fakul'tet Gruzinskogo industrial'nogo instituta (Department of Electrical Engineering of the Georgian Industrial Institute) Ye. M. Rukhvadze worked in Sevastopol' and Tbilisi in the central laboratories of the Gruzenergo. In 1948 he assisted in the organization of the Tbilisskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta elektrifikatsii sel'skogo khozyaystva (Tbilisi Branch of the All-Union Scientific Research Institute for the Electrification of Agriculture) which was later reorganized into the Gruzinskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (Georgian Scientific Research Institute for the Mechanization and Electrification of Agriculture).

Card 1/2

Ye. M. Rukhvadze (Deceased)

SOV/105-59-11-31/32

Since 1944 he worked at the Kafedra Tsentral'nykh elektricheskikh
stantsiy i setey Gruzinskogo politekhnicheskogo instituta ✓
(Chair of the Central Electric Power Plants and Networks of
the Georgian Polytechnic Institute). There is 1 figure.

Card 2/2

ANANIASHVILI, G.D.; BUDZKO, I.A.; BURGUCHEV, S.A.; VACHEYSHVILI, S.Ya.;
KURDIANI, I.S.; LISTOV, P.N.; METREVELI, B.I.; SAZONOV, N.A.;
SARKISYAN, A.M.; SHKHVATSABAYA, G.Ya.; EBIN, L.Ye.

E.M.Rukhvadze. Mekh.i elek.sots.sel'khoz. 17 no.6:59 '59.
(MIRA 13:4)

(Rukhvadze, Egor Mikhailovich, 1914-1959)

KURDIAN, I.S.

Transistorized measuring element of an automatic excitation controller.
Trudy GPI [Gruz.] no.3:71-82 '63. (MIRA 17:6)

0224 1264

ACC NR: AP7008868

SOURCE CODE: UR/0105/65/000/008/0095/0095

AUTHOR: Abelishvili, L. G.; Al'tgauzen, A. P.; Baycher, M. Yu.; Gabashvili, N. V.; Dididze, M. S.; Yefroyimovich, Yu. Ye.; Kotiya, A. K.; Kupradze, G. D.; Kurdiani, I. S.; Netushil, A. V.; Nikol'skiy, L. Ye.; Razmadze, Sh. M.; Svenchanskiy, A. D.; Smelyanskiy, M. Ya.; Tkeshelashvili, G. K.

ORG: none

TITLE: Professor Grigoriy Artemyevich Sisoyan (on his 70th birthday)

SOURCE: Elektrichestvo, no. 8, 1966, 95

TOPIC TAGS: electric engineering personnel, electric furnace, academic personnel

SUB CODE: 09

ABSTRACT: G. A. Sisoyan graduated from the Moscow Power Engineering Institute in 1931. In 1932 he went to work at the Georgian Polytechnical Institute in the theoretical and general electrical engineering department. Sisoyan has worked and published many works in the area of electric furnaces. He has also worked in the area of investigation of electric spark action. He has published over 50 scientific works. He has also been active in university level teaching. Orig. art. has: 1 figure. JPRS: 38,330

UDC: 621.36

Card 1/1

Doc Physicomath Sci

KURDIANI, M. G.

Dissertation: "New Psychrometric Method for Measuring the Air Humidity for All
Temperature Conditions of Earth's Atmosphere."
23/5

Central Inst of Forecasts

SO Vecheryaya Moskva
Sum 71

NOVITSKI, I.G., ANNOT. (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31) (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100)

Study of capillary permeability in relation to radioisotope
iodine in atherosclerosis. Trudy Inst. Klin. Eksp. Kard.
AN Gruz. SSR 8:57-60 1961. (MIR) 1961

1. Institut kardiologii AN Gruz. SSR, Tbilisi.

KURDIANI, N.S.

Some functional and morphological data on the state of the Myocardium in experimental hypertension. *Trav. Inst. Clin. Eksp. Kard. AN Gruz. SSR* 1977, 20, 105. (1978, 1978)

1. Institut kardiologii AN Gruz. SSR, Tbilisi.

ALBANI, R. A.

"Concerning the Investigation by the Method of Tracer Atoms of Phosphorus
Compounds of the Cardiac Muscle in Experimental Hypothyreosis" a report
presented at the Transcaucasian Radiological Conference, Tbilisi, 27-31 Oct 55.

Doc. No. 147, 31 Aug 56

KURDIANI, N. A.

USSR/Human and Animal Physiology - Blood Circulation.
The Heart.

T-6

Abs Jour : Ref Zhur - Biol., No 10, 1958, 46030

Author : Kurdiani, N.A.

Inst : -

Title : Studying Some of the Phosphor Compounds of Cardiac Muscle with the Marked Atom Method in Experimental Hypothyroidism.

Orig Pub : Tr. 1-y Zakavkazsk. konferentsii po med. radiol. Tbilisi, Gruzmediz, 1956, 193-197.

Abstract : Experimental hypothyroidism (H) was produced in rabbits administering to them 6-methylthiouracil in dosages of 100 mg/kg of weight for 60-70 days. After 10 days, first symptoms of H were detected, after 30-40 days, changes of the ECG [electrocardiogram] were observed. Morphologic changes of the thyroid were also noted which are characteristic for H. After 60-70 days, a $\text{Na}_2\text{P}^{32}\text{O}_4$ solution (0.1 curie/kg) was introduced. Twenty-four hours later the animals

Card 1/2

USSR/Human and Animal Physiology - Blood Circulation.
The Heart.

T-6

Abs Jour : Ref Zhur - Biol., No 10, 1958, 46030

were killed, and the heart was subjected to freezing within the thoracic cavity with a mixture of fluid CO₂ and alcohol. Animals with H displayed increased contents of general P in the cardiac muscle (407 mg percent) as compared with normal animals (about 350 mg percent). Also noted were increases of P₃₂ inclusions in all fractions, especially in ATP [adenosine triphosphate] (specific activity of 42.87 percent as against 25.03 percent under normal conditions), as well as into the general acid-soluble P (specific activity of 35.7 percent as against 21.19 percent under normal conditions). Morphologic heart changes were not observed. -- M.Ya. Mayzelis.

Card 2/2

24,7500

15357
S/181/63/005/C02/048/051
B102/B186

AUTHORS: Dzhanelidze, R. B., and Kurdiani, N. I.

TITLE: Temperature dependence of antimony and indium yields from InSb

PERIODICAL: Fizika tverdogo tela, v. 5, no. 2, 1963, 688 - 690

TEXT: The In and Sb yields from crystalline n-type InSb were investigated, as regards temperature dependence on heating over a wide temperature range.

InSb crystalline powder was evaporated at 10^{-4} mm Hg between 250 and 850°C. The films obtained were analyzed by a photocalorimetric method without previous separation of In and Sb. The standard solutions used covered the concentration range 40 - 5%. The results obtained are shown in a diagram and are compared with those obtained in FTI 3, 535 and 1458, 1961. On the basis of these results it is assumed that in InSb Sb has a positive and In a negative effective charge. On annealing due to Sb evaporation vacancies with negative effective charge are formed in the InSb lattice and holes appear in the valence band. As a result of In evaporation positive vacancies arise. At 460°C the Sb vacancies exceed the In vacancies by a

Card 1/2

Temperature dependence of ...

S/181/63/005/002/048/051
B102/B186

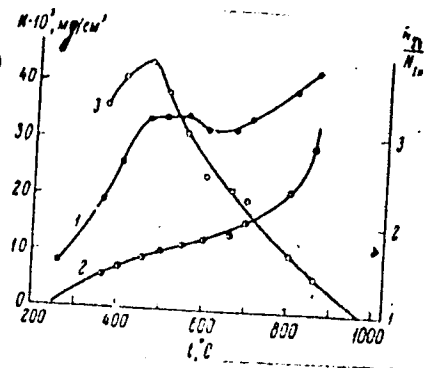
factor 3.7. This difference as well as the possible migration of impurities to inner surfaces, microcracks and conglutination centers are held responsible for the n-to-p-type conversion at 400°C. These assumptions explain also the results given in the above-mentioned papers. There is 1 figure.

ASSOCIATION: Tbilisskiy gosudarstvennyy universitet (Tbilisi State University)

SUBMITTED: July 28, 1962 (initially)
October 22, 1962 (after revision)

Figure. Temperature dependence of the Sb and In yields from InSb crystals.

Legend: (1) N_{Sb} , (2) N_{In} , (3) N_{Sb}/N_{In} .



Card 2/2

L 18384-63

EWT(1)/EWP(q)/EWT(m)/BDS AFFTC/SSD JD

ACCESSION NR: AP3003871

8/0181/63/005/007/1797/1799

59
56

AUTHOR: Kurdiani, N. I.

TITLE: Optical constants^{q1} of InSb in the visible and near ultraviolet regions of the spectrum

27-27

SOURCE: Fizika tverdogo tela, v. 5, no. 7, 1963, 1797-1799

TOPIC TAGS: reflectivity, absorption, refractive index, ultraviolet, visible spectrum, dispersion, wave vector, In, Sb, transmission, wave length, short wave

ABSTRACT: Because of excessive light absorption by InSb, the author prepared thin films of the compound from vapor. These were polycrystalline, and the transmission spectra displayed some indistinct structure in the visible part of the spectrum, such as broad and weak transmission minimums at 760 m μ (1.62 ev) and at 540 m μ (2.28 ev). More reliable data on the nature of absorption in single crystals in the short-wave region were obtained by measuring reflectivity for incident angles near zero. Results on reflectivity, absorption, and refractive index are shown in Fig. 1 (see Enclosure 1). Etching of samples affected only the value of reflectivity, increasing it relative to unetched samples, but it produced

Card 1/3

L 18384-63

ACCESSION NR: AP3003871

3

no change in the spectral distribution of the reflectivity. The author concludes that the first peak on the absorption curve is possibly associated with change in the dispersion law for large values of the wave vector. The second peak is probably associated with transition from a third, split by a spin-orbit interaction between valence and conduction bands. The energy interval between absorption, equal to 0.66 eV, may be due to spin-orbit splitting of the valence band. "The author considers it his duty to express his thanks to Professor I. A. Mirtskhulava and Professor G. R. Khutsishvili for their interest in the work and for their valuable remarks." Orig. art. has: 1 figure and 5 formulas.

ASSOCIATION: Tbilisskiy gosudarstvennyy universitet (Tbilisi State University)

SUBMITTED: 21Jan63

DATE ACQ: 15Aug63

ENCL: 01

SUB CODE: PH

NO REF SOV: 000

OTHER: 005

Card 2/3

L 13783-62

EXT(1)/EXT(m)/BDS/EEC(b)-2/EEED-2

AMD/AFPTC/ASD/AFGC/AFWL/SSD

PL-4 AR/IJP(C)/K

ACCESSION NR: AP3003909

S/0181/63/005/007/2022/2023

70
68

AUTHOR: Kurdiani, N. I.

TITLE: Transmission of infrared rays by indium antimonide irradiated by neutrons 19

SOURCE: Fizika tverdogo tela, v. 5, no. 7, 1963, 2022-2023

TOPIC TAGS: indium antimonide, neutron irradiation, radiation damage, infrared transparency, semiconductor monocrystal irradiation, transparency irradiation response, semiconductor annealing, crystal defect

ABSTRACT: N-type indium antimonide monocrystals with a carrier concentration of $3 \times 10^{16} \text{ cm}^{-3}$ and mobility of $4.8 \times 10^4 \text{ cm}^2/\text{v}\cdot\text{sec}$ have been irradiated at room temperature in the reactor of the Institut fiziki AN Gruz. SSR (Physics Institute, AN Georgian SSR) with an integrated neutron flux density of $8.16 \times 10^{16} \text{ cm}^{-2}$.

Transparency to infrared radiation was measured at wavelengths within the range from 17 to 5 μ . Irradiation did not affect transparency at 300K; however, at 100K the transmittivity of irradiated specimens increased by 10%. At the latter temperature a well-defined transmittivity minimum was observed at about 13.2 μ ; this minimum widened and shifted in the longwave direction when the temperature was raised to 185K. No definite theory can as yet be advanced to explain this

Card 1/2

L 15203-03

ACCESSION NR: AP3003909

minimum. Vacuum annealing of the neutron-irradiated specimens at 350K for 40 hours totally eliminated the defects observed in the longwave emission spectrum, indicating that the phenomena were due to crystalline defects created, in turn, by the collision of fast neutrons with the lattice atoms. "The author is grateful to Prof. I. A. Mirtskhulava for his interest in the work and his valuable advice and to the staff of the atomic reactor of the Physics Institute for irradiation of the crystals." Orig. art. has: 1 figure.

ASSOCIATION: Tbilisskiy gosudarstvennyy universitet (Tbilisi State University)

SUBMITTED: 21Jan63

DATE ACQ: 15Aug63

ENCL: 00

SUB CODE: PH

NO REF SOV: 000

OTHER: 002

Card 2/2

ACCESSION NR: AP4039676

S/0181/64/006/006/1825/1827

AUTHORS: Kurdiani, N. I.; Khavtasi, L. G.; Baramidze, N. V.

TITLE: The effect of doping on the reflection spectrum of indium antimonide in the fundamental band

SOURCE: Fizika tverdogo tela, v. 6, no. 6, 1964, 1825-1827

TOPIC TAGS: indium antimonide, doping, semiconductor, IPO 12 attachment, IKS 12 spectrometer, SF 4 spectrophotometer, light reflection, Brillouin zone, conduction band

ABSTRACT: The authors measured the reflection of light from carefully polished surfaces of InSb doped with Zn and Te during growth. The measurements were made on an IPO-12 attachment to an IKS-12 spectrometer, and also on an SF-4 spectrophotometer in the visible and near-infrared parts of the spectrum at room temperature. Measurements on both p- and n-type samples indicate two peaks in the reflection coefficient. These are related to the optical transition ($L_3 \rightarrow L_1$) between the extremes of the valence and conduction bands and to the transition from the valence band, split off by spin-orbit interaction, to the conduction band at the same values of the wave vector. The energy gap between the peaks corresponds to the

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ACCESSION NR: AP4039676

value of spin-orbit splitting at the edge of the Brillouin band, which is equal to two-thirds of this splitting in the center of the band. With increase in impurity concentration, the reflection maxima shift toward the longer wavelengths. The energy gap is preserved in this shift, indicating that the value of spin-orbit splitting at the edge of the Brillouin band does not change with doping (within the investigated limits). A reduction of the energy gap during doping may be associated with the appearance of a "tail" in the density state in the forbidden band. It may also be due to Coulomb interaction between carriers during strong doping. "The authors express their thanks to Professor I. A. Mirskhulav and Professor V. L. Bonch-Bruyevich for their interest in the work and for valuable remarks. They also thank Docent Yu. V. Chkhartishvili for useful discussions." Orig. art. has: 1 figure.

ASSOCIATION: Tbilisskiy gosudarstvennyy universitet (Tiflis State University)

SUBMITTED: 28Nov63

ENCL: 00

SUB CODE: EC

NO REF SOV: 006

OTHER: 004

Card 2/2

ACCESSION NR: ^PAT4045203

S/0251/64/035/002/0209/0302

AUTHOR: Mirtskhulava, I. A., Chigogidze, Z. N., Kurdiani, N. I., Khvedelidze, L. V., Dzhanelidze, R. B., Mirianashvili, M. M.

TITLE: The possibility of obtaining high-resistance, compensated crystals of indium antimonide by heat treatment

SOURCE: AN GruzSSR. Soobshcheniya, v. 35, no. 2, 1964, 299-302

TOPIC TAGS: indium, antimony, indium antimonide, compensated crystal, crystal electrical resistance, electrical conductivity

ABSTRACT: The resistance of indium antimonide is low primarily because of the presence of impurities. Heat treatment of n-type material generates acceptor levels at $1.6-1.8 \times 10^{-2}$ eV, leading to compensation of band electrons at the residual donor impurity. A diagram shows the conductivity and Hall coefficient in relation to temperature before and after heat treatment (450C). Because of the depth of the thermal acceptor levels, it should be possible to obtain compensated indium antimonide with a resistance of several kilohm, but this turned out to be difficult to achieve because of sensitivity of the material to temperature, time of holding the temperature and the initial donor concentration. A graph of resistivity against time of heating showed a sharp maximum at

Card 1/2

ACCESSION NR: AZ^p4045203

about 2.5 hours. Up to the present, the authors have only managed to obtain 100-130 ohm-cm in p-type InSb having a hole concentration of 10^{13} cm⁻³, while maintaining a high carrier mobility of 5×10^3 cm²/V-sec, but higher resistivities are expected in the near future. Crystals of the material were tested in fast, clamping switches of the breakdown type. The low breakdown voltage (40V/cm) and fast recovery time (microsec.) hold considerable promise. "The authors acknowledge aid from L.S. Khitarishvili, I.M. Purtselaadze, Ye. K. Nemsadze, A.V. Matveyenko and V.G. Avalina." Orig. art. has: 2 figures.

ASSOCIATION: Tbilisskiy gosudarstvennyy universitet (Tiflis State University)

SUBMITTED: 16Apr64

ENCL: 00

SUB CODE: SS, IC

NO REF SOV: 001

OTHER: 001

Card 2/2

L 1723-66

EWT(m)/EPF(c)/EPF(n)-2/EMP(t)/EWP(b)

IJP(c) JD/GG

ACCESSION NR: AP5022717

UR/0181/65/007/009/2749/2753

AUTHOR: Vodop'yanov, L. K.; Kurdiani, N. I.

TITLE: Electric properties of InSb irradiated with neutrons at 77K and electrons at 300K
27 27

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2745-2753

TOPIC TAGS: neutron irradiation, irradiation effect, electron radiation, semiconductor crystal

ABSTRACT: Specimens of n- and p-type InSb crystals were irradiated with neutrons at low temperatures and electrons at room temperature in a pulse reactor. Cd filters were used to prevent nuclear transformations which can occur when the substance interacts with slow neutrons. To detach 1-ev neutrons, which can be resonance-absorbed by indium and can produce transmutation impurities, an additional filter made of indium was applied. The specific resistance of the specimens was measured at 77K during irradiation. For p-type specimens the resistance increased with an increase in the integral irradiation dose and then, apparently because of a change of conductivity type, the resistance decreased, approaching saturation. For n-type specimens the resistance increased, also approaching saturation.

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L 1723-66

ACCESSION NR: AP5022717

The conductivity type did not change. During annealing the p-type specimens underwent inversion, the reverse of what occurred during irradiation. The annealing of n-type specimens consisted of two stages: from 77 to 150K and from 150 to 260K. For the first stage the activation energy of defects was 0.25 ev; for the second, 0.16 ev. After irradiation the dependence of ρ_{sp} on H (p being the specific resistance) did not change, although the absolute value of magnetoresistance increased. Thus, this increase was more substantial for p-type specimens than for n-type. Irradiation of InSb n- and p-type crystals with electrons was carried out at 300K. Electrical properties were measured at 77K. An electrostatic generator was the source of 1-Mev electrons. The electrical properties of p-type specimens were virtually unaffected by irradiation. The specific resistance of n-type specimens increased as the irradiation dose was increased. No inversion was observed. Radiation defects stable at 300K were not detected. The increase in magnetoresistance was not as strong as occurs during neutron irradiation, although it was observable and increased with the size of the irradiation dose. It is concluded that in a two-component InSb semiconductor, unlike an atomic semiconductor (e.g., Ge, Si), electron and neutron irradiation creates radiation defects which affect electrical properties in various ways. Orig. art. has: 4 figures and 1 table. [JA]

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva AN SSSR, Moscow (Physics Institute, AN SSSR)

Card 2/3

L 1723-66

ACCESSION NR: AP5022717

SUBMITTED: 01Feb65

ENCL: 00

SUB CODE: NP,88

NO REF SOV: 001

OTHER: 008

ATD PRESS: 4095

Card 3/3

L 18760-66 EMT(m)/EPF(n)-2/EWP(t) IJP(c) JD/GG
ACC NR: AP6003764 SOURCE CODE: UR/0181/66/008/001/0072/0076

AUTHORS: Vodop'yanov, L. K.; Kurdiani, N. I.

ORG: Physics Institute im. P. N. Lebedev AN SSSR, Moscow (Fiziki institut AN SSSR)

TITLE: Nuclear doping and optical properties of indium antimonide

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 72-76²⁷

TOPIC TAGS: indium antimonide, tin, optic property, semiconductor crystal, neutron bombardment, neutron irradiation, absorption edge, light absorption, forbidden band

ABSTRACT: The purpose of the investigation was to determine the influence of impurities introduced by nuclear doping on certain electric and optical properties of InSb. n-type crystals of InSb were irradiated with large integral fluxes of slow neutrons in the experimental channel of a nuclear reactor. The fast-neutron background was small compared with the main flux of slow neutrons. The maximum temperature during irradiation was not higher than 70C. In view of the large in-

Card 1/2

L 18760-66

ACC NR: AP6003764

duced β and γ radioactivity of the samples, the measurements were made 10 -- 12 months after the irradiation. It was found that irradiation introduces tin into the InSb lattice, and the tin acts like a donor impurity. This was manifest by the appearance of seven spectral lines of Sn (2429, 2706, 2840, 2863, 3009, 3034, and 3175⁰ Å), which were not observed in the samples prior to irradiation. The irradiation was found to shift the edge of the optical absorption band towards shorter wavelengths. The shift increased with increasing radiation dose. This result is attributed to the Burstein effect (Phys. Rev. v. 93, 632, 1954). It was also observed that the forbidden band of irradiated InSb is effectively narrowed down in the case of compensation of strongly doped p-type samples by the transmutation method. This narrowing down is attributed to the appearance of 'tails' of the state density in the forbidden band after strong doping. Authors thank V. S. Vavilov, V. L. Bonch-Bruyevich, and L. V. Keldysh for a discussion of the results and for valuable hints. Orig. art. has: 3 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 28Jun65/ ORIG REF: 005/ OTH REF: 008

Card 2/2 jnl

L 21551-66 EWT(l)/EWT(m)/EFF(n)-2/T/EWP(t)/EWA(h) IJP(c) vD

ACC NR: AP6003805 SOURCE CODE: UR/0181/66/008/001/0254/0256

AUTHOR: Vodop'yanov, L. K.; Kurdiani, N. I.

46
B

ORG: Physics Institute im. P. N. Lebedev, AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: Optical absorption in gallium arsenide irradiated with large integrated fluxes of fast neutrons

21, 44, 27
19, 44, 27

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 254-256

TOPIC TAGS: semiconductor crystal, neutron irradiation, irradiation damage, irradiation effect

ABSTRACT: An investigation was made of changes in the properties of a GaAs semiconductor after strong irradiation with fast neutrons. The specimens used were of nonalloyed n-type GaAs, which before irradiation at 77K had a carrier concentration (n) of $2 \times 10^{17} \text{ cm}^{-3}$, a specific resistance (ρ) of $9 \times 10^{-3} \text{ ohm}\cdot\text{cm}$, and a mobility (μ) of $3 \times 10^3 \text{ cm}^2\cdot\text{v}^{-1}\cdot\text{sec}^{-1}$. The specimens were irradiated in the central channel of a nuclear reactor. After irradiation with large integral fluxes of fast neutrons, the two-component compound GaAs retained its fundamental semiconductor properties. Mobility and the concentration of current carriers, however, decreased. Measurements of the optical

Card 1/2

4 4171-00

ACC NR: AP6003803

0

absorption showed that after strong irradiation the periodic crystal-line lattice in GaAs specimens was preserved and that the general idea of the zone model was applicable. Such irradiation caused no remarkable change in the width of the forbidden zone. Orig. art. has: 1 figure. [JA]

SUB CODE: 20/ SUBM DATE: 27Jul65/ ORIG REF: 001/ OTH REF: 003
ATD PRESS: 4719

Card 212 *BLG*

KURDIANI, Ye. K., Cand Med Sci -- (diss) "Problem of operative access to the cavity of a small pelvis and local anesthetization through the obturator orifice in prostatectomy." Tbilisi, 1960. 19 pp; (Tbiliskiy State Medical Inst); 200 copies; free; (KL, 19-60, 138)

and output continuous information; this fact is valuable in developing a-c
systems devices. A laboratory model of the device is used to generate

Card 2/2

KURDIM, F. [Kurdym, F.], dotsent,

Usefulness and harm of mineral water. Nauka i zhyttia 11
no.2:46 F '62. (MIRA 15:3)

1. Direktor Ukrainskogo nauchno-issledovatel'skogo instituta
kurortologii i fizioterapii.
(Mineral waters--Therapeutic use)

PROCESSES AND PROPERTIES INDEX

1ST AND 2ND COVERS

7

B

Building up of a Hard Metal Alloy by Welding with High-Frequency Current. (In Russian.) E. M. Kuzmak and A. I. Kurdin. *Artoponne Delo* (Welding), no. 3, 1947, p. 1-4.

A method of hard surfacing for drill bits, using high-frequency current, is described. Basic factors influencing the method were thoroughly investigated. Different methods for depositing hard metals and alloys are compared.

ASB-55A METALLOGICAL LITERATURE CLASSIFICATION

62-100000

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

KURDIN, A.I.

Hard facing by means of high-frequency currents. Trudy MNI no.7:128-138
147. (MIRA 12:1)

(Hard facing) (Boring machinery)

А. А. Курдин, редактор

KUZMAK, Ye.M.; KURDIN, A.I.; CHEKIS, Kh.I.; YERSHOV, P.R., redaktor;
POLOSINA, A.S., tekhnicheskii redaktor

[Technology of using hard alloys for well-boring bits] Tekhnologiya
osnashchenia tverdymi splavami colot dlia burenia. Moskva, Gos.
nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1954. 171 p.
(Boring machinery) (MLRA 7:10)

KUZMAK, Ye.M.; KURDIN, A.I.; TUCHKEVICH, N.M.

Using hard alloys for three-dimensional reinforcement of bit
milling cutters. Neft.khoz. 35 no.1:31-35 Ja '57. (MLRA 10:2)

(Cutting tools)