TER-STEPANYAN, Georgii Isayevich, prof., doktor tekhn. nauk;
KARAGEBAKYAN, G.A., otv. red.

[Engineering chain nomograms with rectilinear scales; theory, calculation, and construction] Inzhenernye tsepnye nomogrammy s priamolineinymi shkalami; teoriia, raschet, postroenie. Erevan, Izd-vo AN Arm.SSR, 1965. 271 p. (MIRA 18:12)

KARAGEDOV, R., ekonomist

Improve the procedure for entering deductions from profits in the budget. Fin. SSSR 19 no. 7:60-64 Jl '58. (MIRA 11:8)

1. Upravleniye rybnoy promyshlennosti sovnarkhoza AzerSSR.
(Azerbaijan--Budget)

KARAGEDOV, R. (Yerevan)

Increasing the stimulating role of profit in industry. Vop. ekon. no.8:64-75 Ag '63. (MIRA 16:9)

(Profit)

MOVSESYAN, Yuriy Tatevosovich; KARAGEOV, R.G., otv. red.

[Economic efficiency of automation in the chemical industries; methods and practice in its determining] Ekonomicheskaia effektivnost' avtomatizatsii khimicheskikh proizvodstv; metody i praktika opredeleniia. Erevan, Izd-vo AN Arm.SSR, 1965. 170 p. (Akademiia nauk Armianskoi SSR. Institut ekonomiki i razvitiia narodnogo khoziaistva Armianskoi SSR, no.2) (MIRA 18:12)

KARAGKDOV, R.G.

Coal prices and business accounting. Izv. Sib. otd. AN SSSR no.6:111-114 '62 (MIRA 17:7)

ISMAILOV, R.G.; KORNEYEV, M.I.; KARAGEDOVA, O.T.

Combined operation of the reforming of ligroine with the light cracking of fuel oils in a double-chamber furnace of thermal cracking processes. Khim.i tekh.topl.i masel 7 no.4:3-5 Ap '62. (MIRA 15:4)

1. Sovet narodnogo khozyaystva Azerbaydzhanskoy SSR.
(Baku--Cracking process) (Ligroine) (Gasoline)

KARAGEORGIY-ALKALAYEV, P.M.

Negative photoelectric effect in semiconductors. Izv. AN Uz. SSR. Ser.fiz.-mat.nauk no.6:13-26 '58. (MIRA 12:2)

1. Fiziko-tekhnicheskiy institut AN UzSSR.
(Semiconductors) (Photoelectricity)

24(3) SOV/166-59-6-8/11

AUTHORS: Leyderman, A.Yu., Karageorgiy-Alkalayev, P.M.

TITLE: On the Application of a Semiconductor Scheme With an Impurity Level for the Explanation of the Effects of Cancellation of the Photoconductivity and of the Photoactivation

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matematicheskikh nauk, 1959, Nr 6, pp 60 - 71 (USSR)

ABSTRACT: With the aid of a semiconductor scheme with an impurity level the authors try to give a qualitative explanation for the cancellation of the photoconductivity and the photoactivation. They conjecture that the cancellation is an appearance identical to the negative photoelectric effect. The consideration is essentially carried out with the aid of the investigations of A.D. Shneyder [Ref 1,2]. There are 6 figures, and 9 references, 4 of which are Soviet, and 5 American.

ASSOCIATION: Fiziko tekhnicheskiy institut AN Uz SSR (Physico-Technical Institute AS Uz SSR)

SUBMITTED: January 23, 1959

Card 1/1

9.4300 (2104 1035, 1138, 1143)
26.1630

S/166/60/000/004/006/008
C111/C222

AUTHORS: Aronov, D.A., and Karageorgiy-Alkalayev, P.M.

TITLE: On the Theory of the Inverse Volt-Ampere Characteristic of Semiconductor Diodes

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR. Seriya fiziko-matematicheskikh nauk, 1960, No.4, pp. 75-88.

TEXT: The authors obtain an expression for the volt-ampere characteristic of a diode with a crass p-n junction and a finite thickness of a region of diodes. In presence of an anti-depletion layer at the contact with the metal there holds a saturation of the back current. The strength of the saturation currents is small. Therefore the authors recommend a use of contacts with anti-depletion layers. In the case of good ohmic contacts and contacts with depletion layer the back current in the region of saturation increases with the voltage as

$$(w'-x_1 + \frac{1}{\alpha_1}\theta)^{-1},$$

where w' is the right boundary of the quasineutral n-region, x_1 is the width of the volume charge in the electronic semiconductor and θ is a

Card 1/2

On the Theory of the Inverse Volt-Ampere Characteristic of Semiconductor Diodes

constant. It is stated that such an increase is in no connection with the generation of carriers in the region of the volume charge. For voltages for which the volume charge is extended up to the contact, the back current changes in dependence on the voltage in agreement with the model of the "chemical" depletion layer (Ref.13). It is shown that in the case of thin diodes the differential resistance has a maximum. The situation of the maximum depends weakly on the temperature. A comparison with the experiment (Ref.6) showed a good agreement. The authors mention K.B.Topygo, E.I.Rashba and A.I.Gubanov. There are 3 figures and 18 references: 12 Soviet, 3 English, 1 American and 2 German.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN Uz SSR (Physical-Technical Institute of the Academy of Sciences Uzbekskaya SSR)

SUBMITTED: May 5, 1960

87236

9.4160 (3201, 1003, 1137)
9.4300 (3203, 1043, 1143)

S/166/60/000/005/003/008
C111/C222

AUTHOR: Karageorgiy-Alkalayev, P.M.

TITLE: The Negative Photoelectric Effect on the Minority Carriers in the p-n Junction

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matematicheskikh nauk, 1960, No.5, pp.35-47

TEXT: The paper is written under the leading of Professor G.M.Avak'yants. By investigating the system of equations given in (Ref.13) which describes the state of the n-region of a p-n-junction, the author states: For return currents by a p-n-junction a negative photoelectric effect can be reached at the expense of a concentration lowering of the minority carriers by an action of light. A necessary assumption for the appearance of the negative photoelectric effect is that the photo-sensitive region is small compared with the length of diffusion of the minority carriers. If the volume charge in this photo-sensitive region is sufficiently broad then for voltages being greater than a certain critical one, a negative photoelectric effect is considered. If, however, the region of the volume charge is narrow then the negative photoelectric effect appears for voltages being smaller than the critical one. The negative photoelectric

Card 1/2

87-16

S/166/60/000/005/003/008
C111/C222

The Negative Photoelectric Effect on the Minority Carriers in the p-n Junction

effect as well as its critical voltage are dependent on the temperature. If the critical voltage equals zero then there must exist a photo-electromotive force and a short-circuit current with anomalous signs. The described negative photoelectric effect has the characteristic property that it may appear if in the depth of the semiconductor (in consequence of an essential concentration growth of the majority carriers by an action of light) the photoelectric effect is positive.
There is 1 figure and 14 references: 11 Soviet, 2 American and 1 German.

[Abstracter's note: (Ref.13) concerns K.B.Tolpygo and I.G.Zaslavskaya, Zh. TF, 1955, XXV, 6]

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UzSSR (Physical-Technical Institute of the Academy of Sciences Uzbekskaya SSR)

SUBMITTED: January 21, 1960

Card 2/2

S/166/61/000/002/002/006
B112/B217

9,4340 (1143,1160)

AUTHOR: Karageorgiy-Alkalayev, P. M.

TITLE: Effect of "deep" impurities on the volt-ampere characteristic of semiconductor diodes

PERIODICAL: Izvestiya Akademii nauk UzSSR. Seriya fiziko-matematicheskikh nauk, no. 2, 1961, 12-28

TEXT: The author studies the influence of "deep" donor- and acceptor-type impurities, on the volt-ampere characteristic of a semiconductor, the band scheme of which is shown in Fig. 2. The system of the equations for the conservation of carriers has the following form in the steady case:

$$\alpha_1 n_1 - \beta_1 n(N_1 - n_1) + \gamma_2(N_2 - n_2) - \delta_2 n_2 n + \alpha - \beta np = dj_n/dx,$$

$$\beta_1 n(N_1 - n_1) - \alpha_1 n_1 + \gamma_1(N_1 - n_1) - \delta_1 n_1 p = 0,$$

$$\beta_2 p(N_2 - n_2) - \alpha_2 n_2 + \gamma_2(N_2 - n_2) - \delta_2 n_2 n = 0.$$

The author obtains the following volt-ampere characteristic:

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$$\frac{I}{e}=\left(p_n\left\{\left[\left(\left(\frac{\vartheta_p}{L_p}\right)^2+\frac{X_1}{\tau_p}r_p\left(\frac{w-w'}{\tau_p}r_p+s_p^*\right)\right]\operatorname{th}\frac{w'-X_1}{L_p}+\right.\right.$$

$$+\frac{\vartheta_p}{L_p}\left(\frac{w-w'}{\tau_p}r_p+\frac{X_1}{\tau_p}r_p+s_p^*\right)\Bigg\}\Bigg\{\left(\frac{w-w'}{\tau_p}r_p+s_p^*+\right.$$

$$+\left[\left(\frac{\vartheta_p}{L_p}\right)^2+\frac{X_1}{\tau_p}r_p\left(\frac{w-w'}{\tau_p}r_p+s_p^*\right)\right]\frac{1}{\vartheta_p}\int_0^{X_1}e^{-\frac{e}{kT}\int_{X_1}^{u}E\,dx}\,du\Bigg)\operatorname{th}\frac{w'-X_1}{L_p}+$$

$$+\frac{\vartheta_p}{L_p}\left[1+\left(\frac{w-w'+X_1}{\tau_p}r_p+s_p^*\right)\frac{1}{\vartheta_p}\int_0^{X_1}e^{-\frac{e}{kT}\int_{X_1}^{u}E\,dx}\,du\right]\Bigg\}^{-1}+$$

$$+n_p\frac{\dots\dots\frac{X_2}{\tau_n}r_n+\frac{\vartheta_n}{L_n}}{1+\frac{1}{L_n}\int_0^{-X_1}\exp\left(\frac{e}{kT}\int_{-X_1}^{w}E\,dx\right)du}\Bigg)\left(e^{\frac{eV}{kT}}-1\right),\qquad(15)$$

Here, τ_p denotes the lifetime of minority carriers, r_p ratio of the lifetime of minority carriers in the quasi-neutral region to the lifetime of minority carriers in the region of space charge, and s_p^* effective surface recombination rate. The author obtains the following expressions for X_1 and X_2:

$$X_1 = \left(\frac{\varepsilon N_1^p B_p | V - V_k |}{2\pi e N_1^n B_n (N_1^n B_n + N_1^p B_p)} \right)^{\frac{1}{2}}, \quad (17)$$

and

$$X_2 = \left(\frac{\varepsilon N_1^n B_n | V - V_k |}{2\pi e N_1^p B_p (N_1^n B_n + N_1^p B_p)} \right)^{\frac{1}{2}}, \quad (18)$$

where V_k denotes the contact potential of the p-n junction:

$$V_k = -\frac{kT}{e} \ln \frac{n_i^2}{\left[N_1^n - (N_2^n)\right]\left[N_1^p - (N_2^p)\right]}.$$

22971

S/166/61/000/002/002/006
B112/B217

Effect of "deep" impurities on the...

The author discusses in detail the volt-ampere characteristics obtained for the semiconductor, and compares his results with those of other authors, especially A. I. Gubanov, I. Kh. Geller, P. V. Sharavskiy, and P. T. Kozyrev. Fig. 3 shows the influence of "deep" impurities on the volt-ampere characteristic. Professor G. M. Avak'yants is mentioned. There are 3 figures and 25 references: 13 Soviet-bloc and 12 non-Soviet-bloc. The most important references to English-language publications read as follows: Shockley W., Read W., Phys. Rev., 87, 835, 1952. Sah C. T., Noyce R., Shockley W., Proc. IRE, 45, 1228, 1957.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UzSSR (Institute of Physics and Technology, Academy of Sciences Uzbekskaya SSR)

SUBMITTED: November 20, 1960

Card 4/6

24.2600 (1137, 1138, 1147)

29056
S/166/61/000/005/002/004
B125/B102

AUTHORS: Karageorgii-Alkalayev, P. M., Leyderman, A. Yu.

TITLE: Contribution to the theory of negative photodiode effect

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 5, 1961, 68 - 77

TEXT: The authors have investigated a sharp p-n junction, the n-region of which is bounded by a contact with a metal. In addition to strongly ionized impurities, the p- and n-regions contain "deep" impurities. If light is allowed to act only on the deep impurity levels, the system

$$\frac{d}{dx} j_n = \alpha_1 n_1 - \beta_1 n (N_1 - n_1) + \gamma_2 (N_2 - n_2) - \delta_2 n_2 n + \alpha - \beta np + A (N_2 - n_2), \quad (1)$$

$$\beta_1 n (N_1 - n_1) - \alpha_1 n_1 + \gamma_1 (N_1 - n_1) - \delta_1 n_1 p = 0, \quad (2)$$

$$\beta_2 p (N_2 - n_2) - \alpha_2 n_2 + \gamma_2 (N_2 - n_2) - \delta_2 n_2 n + A (N_2 - n_2) - C n_2 = 0, \quad (3)$$

Card 1/2

Contribution to the theory...

$$\frac{dE}{dx} = \frac{4\pi e}{\varepsilon}\left[p - n + (N_1 - n_1) - ((N_2) - n_2)\right], \quad (4)$$

$$\frac{dn}{dx} = -n\frac{eE}{kT} + j_n/\vartheta_n, \quad (5)$$

$$\frac{dp}{dx} = p\frac{eE}{kT} - j_p/\vartheta_p. \quad (6)$$

4f

describes the behavior of semiconductor carriers, and therefrom one finds the hole concentration on the deep impurity levels. Low concentrations of free carriers in the region of volume charge are given by the Poisson equation

$$\frac{dE}{dx} = \frac{4\pi e}{\varepsilon} N_1^n B_n, \quad (8)$$

$$B_n = 1 + \frac{N_2/N_1}{1 + \frac{\beta_2 B_+}{\delta_2 B_-} e^{\frac{\vartheta - 2\vartheta_1}{kT}}} +$$

with

Card 2/7 6

$$+\frac{\left(A\frac{\beta_2 B_+}{\delta_2 B_-}e^{\frac{\vartheta-2\vartheta_1}{kT}}-C\right)\frac{1}{\delta_2 B_-}e^{\frac{\vartheta-\vartheta_1}{kT}}N_2/N_1}{\left(1+\frac{\beta_2 B_+}{\delta_2 B_-}e^{\frac{\vartheta-2\vartheta_1}{kT}}\right)\left(1+\frac{\beta_2 B_+}{\delta_2 B_-}e^{\frac{\vartheta-2\vartheta_1}{kT}}+\frac{A+C}{\delta_2 B_-}e^{\frac{\vartheta-\vartheta_1}{kT}}\right)}, \quad (9)$$

for deep donor-type impurities and with

$$B_0=1-\frac{N_2/N_1}{1+\frac{\delta_2 B_-}{\beta_2 B_+}e^{-\frac{\vartheta-2\vartheta_1}{kT}}}-$$

$$-\frac{\left(C\frac{\delta_2 B_-}{\beta_2 B_+}e^{-\frac{\vartheta-2\vartheta_1}{kT}}-A\right)\frac{1}{\beta_2 B_+}e^{\frac{\vartheta_1}{kT}}N_2/N_1}{\left(1+\frac{\delta_2 B_-}{\beta_2 B_+}e^{-\frac{\vartheta-2\vartheta_1}{kT}}\right)\left(1+\frac{\delta_2 B_-}{\beta_2 B_+}e^{-\frac{\vartheta-2\vartheta_1}{kT}}+\frac{A+C}{\beta_2 B_+}e^{\frac{\vartheta_1}{kT}}\right)}, \quad (10)$$

for deep acceptor-type impurities. A quasineutral region is assumed to exist for the recombination coefficients a) $a_2 > \beta_2 p > \gamma_2$, $a_2 > \delta_2 n$ and b) $\delta_2 n > a_2 > \beta_2 p > \gamma_2$. The lifetime of the minority carriers is greater if

Contribution to the theory...

the deep impurities are illuminated than it is in the case of darkness. The boundary condition valid on the contact is given. The n-region is assumed to be about as large as, or smaller than, the diffusion length of the minority carriers and the dimensions of the p-region are assumed to be much larger than the diffusion length. Then, the total current passing through the p-n junction is practically equal to the hole current.

$$\frac{I}{e} \simeq \frac{\vartheta_p \left[p_n^0 \left(e^{\frac{eV}{kT}} - 1 \right) - \Delta p \right]}{w - X_1^0 + \int_0^{X_1} \exp\left(-\frac{e}{kT} \int_{X_1}^{u} E dx \right) du} . \qquad (20)$$

is valid for $w < L_p$ (thin diode). The influence of light decreases the inverse current passing through a p-n junction at sufficiently high inverse voltages. If the n-region is filled with a space charge (model of a chemical barrier layer),

$$-\frac{I}{e} = \vartheta_p p_\mu^0 e^{\frac{e}{kT}\int_{w'}^{w} E_0 dx} \frac{\exp\left\{ \frac{ed}{kT} \left[E_0(w) - E(w) \right] \right\}}{\int_0^w e^{-\frac{e}{kT}\int_w^u E dx} du} . \qquad (24)$$

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will hold for high surface-recombination rates. In the case of sufficiently great inverse shifts, illumination from the region of impurity absorption decreases the inverse current. V. I. Murygin (DAN UzSSR, 1957,2) found a similar phenomenon with Se photoelements. A comparison of the results derived from this model with the peculiarities of the negative photodiode effect leads to the following conclusions: 1) The dependence of the inverse current on the applied voltage remains the same in darkness and under action of light. 2) If the activation energy of the deep impurities affected by light is properly chosen, the light-induced variation of the concentration of the ionized impurities will decrease strongly with increasing temperature. The present model leads to an upper temperature limit of the negative photodiode effect. 3) The neutralization of a certain quantity of ionized impurities under the action of light extends the volume charge of the p-n junction into the p-region. 4) The spectral properties of the negative photodiode effect reveal the impurity character of this phenomenon. 5) The lux-ampere characteristic of the negative photodiode effect tends toward saturation of a hyperbolic type. In the authors' opinion, the present model gives a sufficient description of the principal features of the negative photo-

4

Contribution to the theory...

diode effect. There are 3 figures and 12 references: 11 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: Shokley W., Read W.Phys.Rev., 1952, 87, 835.

4

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UzSSR (Physicotechnical Institute, AS Uzbekskaya SSR)

SUBMITTED: May 18, 1961

Card 6/6

AVAK'YANTS, G.M.; ARONOV, D.A.; KARAGEORGIY-ALKALAYEV, P.M.

Reverse volt-ampere characteristic of semiconductor diodes. Fiz. tver.tela 3 no.5:1400-1410 My '61. (MIRA 14:6)

1. Fiziko-tekhnicheskiy institut Akademii nauk UzSSR, Tashkent.
(Voltammetry) (Germanium diodes)

38365

24.2600

S/058/62/000/005/094/119
A061/A101

AUTHORS: Karageorgii-Alkalayev, P. M., Leyderman, A. Yu.

TITLE: A contribution to the theory of the negative photodiode effect

PERIODICAL: Referativnyy zhurnal, Fizika, no. 5, 1962, 36, abstract 5E286 ("Izv. AN UzSSR. Ser. fiz.-matem. n., 1961, no. 5, 68-77, Uzbek. summary)

TEXT: The negative photodiode effect was theoretically studied on a sharp p-n junction, the n-region of which was bounded by a metal contact. This effect is explained with a model displaying deep impurity levels, besides highly ionized impurities; the carrier concentration in the deep impurities changes under the action of light. A calculation shows that the lifetime of minority carriers, related to the deep levels, is prolonged by illumination. If the space charge does not cover the whole n-region, the space charge layer is reduced by illumination, and the current through the junction is diminished if there are sufficiently high reverse voltages. If the n-region is filled with the space charge, illumination reduces the concentration of ionized impurities, and the electric field on the contact with the metal, and, consequently, also the thermionic

Card 1/2

A contribution to the theory ...

emission current from the metal to the semiconductor, are reduced. The theory explains the dependence of current on voltage in the negative photodiode effect, the existence of an upper temperature limit of this effect, the change of capacity on illumination, and the spectral and lux-ampere characteristics of the negative photodiode effect, observed by V. I. Murygin on photoelectric cells (RZhFiz, 1957, no. 10, 25970; 1962. 2E375).

Yu. Ravich

[Abstracter's note: Complete translation]

Card 2/2

L 11147-63 BDS
ACCESSION NR: AT3002977 S/2927/62/000/000/0040/0048

45

AUTHOR: Avak'yants, G. M.; Grinberg, I. S.; Karageorgiy-Alkalayev, P. M.

TITLE: Effect of forward currents on reverse currents in the selenium rectifiers [Report at the All-Union Conference on Semiconductor Devices, Tashkent, 2-7 October, 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 40-48

TOPIC TAGS: AVS selenium rectifier, TVS selenium rectifier, selenium rectifier reverse current

ABSTRACT: It has been known that passing a forward current through a selenium rectifier renders appreciable influence on the magnitude of the reverse current. A theoretical and experimental investigation described in the article shows that, beginning with a certain value of the reverse-voltage amplitude, the reverse current drops when the forward current is turned on. Also, the reverse current depends on the voltage to a lesser degree when the forward current is on. A differential equation is written for a "thin" diode which describes the variation of hole concentrations on the "deep" impurities. A solution of this equation shows

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L 11147-63
ACCESSION NR: AT3002977

that, with the forward current increasing, the reverse current through a p-n junction increases up to a certain critical point, and then decreases; under static conditions the reverse current is smaller than under dymanic and pulsating conditions. Reverse current-voltage characteristics, reverse current vs. temperature (within -100 + 100C), and reverse current vs. forward current curves were taken experimentally for types AVS and TVS selenium rectifiers; the curves are presented in the article. "In conclusion the authors express their gratitude to O. G. Bakradze for the assistance in measurements." Orig. art. has: 3 figures and 19 formulas.

ASSOCIATION: Akad. nauk SSSR(Academy of Sciences SSSR); Akad. nauk UzSSR(Academy of Sciences UzSSR); Tashkentskiy gosuniversitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 006 OTHER: 000

cs/bmv
Card 2/2

L 11148-63 EDS

ACCESSION NR: AT3002978 S/2927/62/000/000/0048/0049

45

AUTHOR: Avak'yants, G. M.; Karageorgiy-Alkalayev, P. M.

TITLE: Nature of negative resistance in the reverse branch of the current-voltage characteristics of selenium rectifiers [Report at the All-Union Conference on Semiconductor Devices, Tashkent, 2-7 October, 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 48-49

TOPIC TAGS: selenium rectifier negative resistance

ABSTRACT: It was observed that a section of negative resistance appears on the current-voltage characteristic of selenium rectifiers in the region of high reverse bias. Only the characteristic taken under dynamic conditions shows this negative-resistance section. The explanation offered is: with a high bias, a regular reverse-current-vs.-temperature characteristic can exist under dynamic conditions while this characteristic is anomalous under static conditions. Experiments proved that, indeed, cooling the rectifier annihilates the negative-resistance section. Orig. art. has: 4 formulas.

Card 1/2 Tashkent State University

40057
S/166/62/000/003/005/010
B163/B104

24.7700

AUTHORS: Avak'yants, G. M., Grinberg, I. S., Karageorgiy-Alkalayev, P. M.

TITLE: Influence of direct currents on reverse currents in selenium rectifiers

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 3, 1962, 45 - 55

TEXT: If an alternating voltage is applied to a selenium rectifier, the parts of the semiconductor at the boundary between the space charge region and the quasineutral region are periodically emptied and refilled with mobile charge carriers according to the sign of the voltage. Experimental data (I. S. Grinberg, DAN UzSSR, 1959, no. 1; 1960, no. 8) show that the reverse current which flows through the rectifier during the halfperiod of reverse voltage is smaller if the forward current flows during the other half period (dynamic regime) and larger if there is no forward current during the other half period (pulsed regime). As a model for the selenium rectifier, a thin diode is studied theoretically which has a space charge

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Influence of direct currents...

in the n-region separated from the metallic electrode by a gap of given width. It is further assumed that apart from the impurities determining the type of conductivity the p- and n-regions of this diode include deep, weakly ionized impurity levels with a high activation energy, uniformly distributed over the depth of the junction. Theoretical reverse current-voltage characteristics are calculated under these assumptions with a forward current either present or absent, whence a condition is derived which the carrier generation and recombination coefficients must fulfill in order that the sign denoting the influence of the forward current on the reverse current may be correct. In experiments on several rectifiers of ABC-(AVS-) and TBC-(TVS-) type, it is generally found that the difference Δj of the reverse currents in the dynamic and pulsed regimes is slightly negative for voltages between 5 and 15v but changes its sign to positive and becomes much larger for higher voltages. The temperature dependence of Δj was measured between -100 and +100°C. At low voltages (15v) this temperature dependence is weak but at higher voltages (35v) it is much stronger and the sign of Δj can change with temperature. A qualitative explanation of the observed effects is possible in terms of the theory as developed, though in fact the experimental reverse current-

Card 2/3

L 11133-63 EWT(d)/EWT(l)/EWG(k)/FCC(w)/EDS/EEC(b)-2 AFFTC/ASD/ESD-3 Pz-4
AT/IJP(C)
ACCESSION NR: AT 3002979 S/2927/62/000/000/0049/0052

AUTHOR: Avak'yants, G. M.; Karageorgiy-Alkalayev, P. M.; Teshabayev, A. 69 68

TITLE: Theory of space charge in semiconductors
[Report at the All-Union Conference on Semiconductor Devices, Tashkent, 2-7 October, 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 49-52

TOPIC TAGS: semiconductor space charge, selenium rectifier reverse current

ABSTRACT: In solving the Poisson equation (see Enclosure 1), it has been usually assumed that Rho is either a constant or a function of x (because the impurity concentration varies with the depth of semiconductor). It has been assumed that the ionized-impurity concentration is independent of the electric field intensity within the space charge of the semiconductor. However, the latter assumption is not true when strong-field effects are considered. The article analyzes mathematically a contact between an n-type semiconductor and a metal when the type of conduction is determined by shallow-seated impurities. A formula for the space-charge density (see Enclosure 1) is analyzed for 4 particular cases. The resulting

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L 11133-63
ACCESSION NR: AT3002979

formulas are offered to explain qualitatively the reverse-current phenomena in selenium rectifiers. Orig. art. has: 18 formulas.

ASSOCIATION: Akad. nauk SSSR(Academy of Sciences SSSR); Akad. nauk UzSSR(Academy of Sciences UzSSR); Tashkentskiy gosuniversitet im. V. I. Lenina (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 01

SUB CODE: 00 NO REF SOV: 002 OTHER: 000

Card 2/2

L 11045-63 EWG(k)/EWT(1)/BDS/EEC(b)-2 AFFTC/ASD/ESD-3 Pz-4 AT/IJP(C)

ACCESSION NR: AT3002980 S/2927/62/000/000/0052/0060 65 64

AUTHOR: Ayak'yants, G. M.; Karageorgiy Alkalayev, P. M.; Leyderman, A. Yu.

TITLE: Effect of adhesion levels on the current-voltage characteristic of a long diode at high injection levels
[Report at the All-Union Conference on Semiconductor Devices, Tashkent, 2-7 October, 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 52-60

TOPIC TAGS: long semiconductor diode, semiconductor diode adhesion level

ABSTRACT: An asymmetrical p-n junction is theoretically considered in which the p-band is alloyed to a much greater degree than the n-band. A purely hole current is assumed through the p-n junction. The W. Shockley and W. Read formula (Phys. Rev. 87, 835, 1952) is discussed, and the depth of the hole-adhesion level is determined for two limiting cases. The current-voltage characteristic is subdivided into four sections: (1) a moderate-injection-level zone, (2) a higher current zone, (3) a current zone when the number of holes in the adhesion levels equals the number of the levels, and (4) a high-injection-level zone. Each zone is discusse and formulas supplied. Academy of Sciences UzSSR Tashkent State Univ.

Card 1/2

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S/166/62/000/003/010/010
B178/B102

AUTHORS: Avak'yants, G. M., Karageorgiy-Alkalayev, P. M., Teshabayev, A.

TITLE: Theory of space charge in semiconductors

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 3, 1962, 81 - 84

TEXT: The contact between an n-type semiconductor and a metal is considered. In the expression for the space charge density $\rho(E) = N_+ + N_0 g E^n$, n is made equal to 1/2, 1, 3/2, and 2, and the solution of Poisson's equation $\frac{dE}{dx} = \frac{4\pi e}{\varepsilon}\rho$ is investigated, where $\rho = \rho(x)$, x = depth in the semiconductor; N_+ = concentration of completely ionized, shallow impurities, N_0 = concentration of deep impurities ionized without a field, and g is a coefficient. It is assumed that $E(x=X_1) = 0$, where X_1 = width of the space charge zone. When n = 1/2, one obtains:

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$$E(0) = -\left(\frac{6\pi e N_0 g'}{\varepsilon}\right)^{1/3} |V - V_k|^{2/3}. \quad (5)$$

$$X_1 = 3^{1/3}\left(\frac{\varepsilon}{2\pi e N_0 g'}\right)^{1/3} |V - V_k|^{1/3}. \quad (6)$$

where E(0) = contact field strength; when n = 1:

$$E(0) = \frac{4\pi e}{\varepsilon} N_0 g |V - V_k| + \frac{N_+}{N_0 g} \ln\left(1 + \frac{N_0 g}{N_+} E(0)\right), \quad (9)$$

$$X_1 = -\frac{\varepsilon}{4\pi e N_0 g} \ln\left(1 + \frac{N_0 g}{N_+} E(0)\right). \quad (10)$$

and when n = 3/2, the effect of the field strength on the space charge density is negligible. When the Schottky model is taken into account, one obtains $E = \frac{4\pi\rho}{\varepsilon} N_+(x - X_1)$. When $E_f = E(x = X_f)$, one finds that

$$|E(0)| = \left(\frac{2\pi e}{\varepsilon} N_0 g\right)^2 \left[(V - V_k) - \right.$$

$$\left. - \frac{\varepsilon}{2\pi e N_0 g} \sqrt{|E_f|} + \frac{\varepsilon |E_f|^2}{8\pi e N_+}\right]^2. \quad (14)$$

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Theory of space charge...

and when n = 2:

$$E(0) = -\sqrt{\frac{N_+}{N_0 g}}\sqrt{\exp\left[\frac{8\pi e}{\varepsilon}N_0 g|V - V_a|\right] - 1}. \quad (15)$$ and

$$X_1 = \frac{\varepsilon}{4\pi e N_+}\sqrt{\frac{N_+}{N_0 g}}\arccos\left\{\exp\left[\frac{4\pi e N_0 g}{\varepsilon}(V - V_a)\right]\right\} \quad (17)$$

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UzSSR (Physicotechnical Institute of the AS UzSSR)

SUBMITTED: May 20, 1961

Card 3/3

L 12904-63 EWP(q)/EWT(m)/BDS AFFTC/ASD RDW/JD 60
ACCESSION NR: AT3002989 S/2927/62/000/000/0105/0111 59

AUTHOR: Geller, I. Kh.; Zaugol'nikova, Ye. G.; Karageorgiy-Alkalayev, P. M.; Karimova, I. Z.; Mury*gin, V. I.; Nechayeva, R. Ye.

TITLE: Analyzing certain characteristics of selenium rectifiers [Report of the All-Union Conference on Semiconductor Devices held in Tashkent from 2 to 7 October 1961]

SOURCE: Elektromno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 105-111

TOPIC TAGS: AVS selenium rectifier, TVS selenium rectifier, selenium rectifier current-voltage, selenium rectifier capacitance, selenium rectifier

ABSTRACT: Experimental data on AVS and TVS selenium rectifiers is compared with theoretical considerations. Current-voltage and capacitance characteristics of these types were determined within -120 +160C range. It was found that the diffusion potential decreases linearly as the temperature increases which agrees well with some published theoretical data. Reverse current-voltage characteristics determined experimentally, with various temperatures as parameters, showed that they represent different exponential functions; the

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L 12904-63

ACCESSION NR: AT3002989

latter depend on the temperature, not on the type of rectifier alone as was supposed in earlier published works. Differential resistance and capacitance of the above rectifiers were measured within a broad range of temperatures. Forward and reverse current-voltage characteristics, a diffusion-potential-temperature curve, and capacitance-voltage relations are given in the article, as well as interpretations of the physical phenomena involved. Orig. art. has: 7 figures, 1 formula, and 2 tables.

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences SSSR); Akademiya nauk Uzbekskoy SSR (Academy of Sciences UzSSR) Tashkentskiy gosudarstvenny*y universitet (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 009 OTHER: 001

Card 2/2

L 12987-63 EWT(l)/EWO(k)/BDS/EEC(b)-2 AFFTC/ASD/ESD-3 Pz-4 AT/IJP(C)

ACCESSION NR: AT3003000 S/2927/62/000/000/0176/0182

AUTHOR: Karageorgiy-Alkalayev, P. M.; Leyderman, A. Yu.

TITLE: Theory of negative photodiode effect [Report of the All-Union Conference on Semiconductor Devices held in Tashkent from 2 to 7 October 1961]

SOURCE: Elektronnon-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 176-182

TOPIC TAGS: semiconductor negative photodiode effect, selenium photocell, negative photodiode effect

ABSTRACT: In Ge-photocells, the light-determined component of the output current is independent of the reverse bias. However, in Se-photocells the component is variable and negative at a sufficiently high reverse bias (the "negative photodiode effect"). The article offers a theoretical investigation of the above effect with an assumption that it is due to a luminous action on impurities in the space-charge region. Differential equations describing the behavior of carriers are set up, solved, and investigated with these conclusions: (1) the shape of the reverse current-applied voltage curve is the same for both light and dark conditions; (2) an upper temperature limit of the negative photodiode effect exists and depends on the energy of activating the deep impurits; (3) illumination causes an

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ACCESSION NR: AT3003000

2

expansion of the space-charge region of p-n junction into the p-region; (4) the spectral characteristic of the negative photodiode effect clearly reveals its impurity-determined nature; (5) the light-determined component of the ionized-impurity concentration in the space-charge region tends to approach a hyperbolic-type saturation. It is found that the above conclusions are corroborated by the experimental results obtained by Y. I. Mury*gin (Fotoelektrickeskiye i opticheskiye yavleniya v poluprovodnikakh." Trudy* I Vsesoyuznogo soveshchaniya po fotoelektrichskim i opticheskim yavleniyam v poluprovodnikakh, Kiev, 1959). Orig. art. has: 3 figures and 18 formulas.

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences SSSR) Akademiya nauk Uzbekskoy SSR (Academy of Sciences UzSSR) Tashkentskiy gosudorstvenny*y universitet (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 005 OTHER: 000

Card 2/2

L 12632-63 BDS

ACCESSION NR: AT3003001 S/2927/62/000/000/0182/0189

47

AUTHOR: Karageorgiy-Alkalayev, P. M.

TITLE: Effect of recombination of carriers in the near-contact region on the current-voltage characteristic of a semiconductor diode [Report of the All-Union Conference on Semiconductor Devices held in Tashkent from 2 to 7 October 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 182-189

TOPIC TAGS: semiconductor diode

ABSTRACT: Usually the current-voltage characteristic of a p-n junction has been calculated with an assumption that the near-contact n-region has a high resistivity. Hence the electron component of the junction current has been neglected. However, in many cases (e.g., in alloy p-n junctions) the near-contact region is thin and of low resistivity, and therefore, the electron current is a determining factor. These conditions are investigated theoretically in the article. Formulas describing the streams of electrons and holes across the metal-semiconductor boundary are substituted into the equations describing the current-voltage characteristics; that permits characterizing the contact by the effective rate of recombination.

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L 12632-63
ACCESSION NR: AT3003001

Further transformations permit estimating the voltage drop on the p-n junction and in the near-contact space charge. Finally, the expressions for the saturation current are developed and compared with some experimental previously published data. Orig. art. has: 18 formulas.

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences SSSR) Akademiya nauk Uzbekskoy SSR (Academy of Science UzSSR) Tashkentskiy gosudarstvenny*y universitet (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 005 OTHER: 002

mcs/dd
Card 2/2

L 13051-63 EWT(l)/EWG(k)/BDS/EEC(b)-2 AFFTC/ASD/ESD-3 Pz-4
AT/IJP(C)
ACCESSION NR: AT3003002 S/2927/62/000/000/0189/0198

AUGHOR: Karageorgiy-Alkalayev, P. M.

TITLE: Effect of deep impurity centers on some properties of p-n junctions [Report of the All-union Conference on Semiconductor Devices held in Tashkent from 2 to 7 October 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 189-198

TOPIC TAGS: semiconductor junction properties

ABSTRACT: The theory of C. T. Sah, R. Noyce, and W. Shockley (Proc. IRE, 45, 1228, 1957) considers deep impurity centers only as generators of carriers in the space-charge region. Ionization of these impurities is considered negligible, as well as their effect on the space charge. Such an assumption is not necessarily permissible even in the case of a single-charge trap. In the case of multicharge deep centers, the additional charge set up by their ionization can materially affect the shape of the current-voltage characteristic of a thin diode. Even in the case of a thick-base diode, the deep-center charges may affect the capacitance of the p-n junction, the diffusion potential, or the saturation current. The above phenomena are analyzed, in the article, by a set of differential equations

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ACCESSION NR: AT3003002

describing the conservation of number of carriers and by the Poisson equation. Influence of deep impurity centers in the forbidden band upon the diffusion potential of a p-n junction is analyzed, as well as the appearance of multicharge centers in this band. The conclusion is drawn that the space-charge electric field can substantially affect the filling of deep impurity centers. Comments are offered on some results of investigation of Cd-InSb junction capacitance obtained by C. A. Lee and G. Kaminsky (J. Appl. PHYS., 31, 1717, 1960). Orig. art. has: 30 formulas.

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences SSSR) Akademiya nauk Uzbekskoy SSR(Academy of Sciences UzSSR) Tashkentskiy gosudarstvenny*y universitet (Tashkent State University)

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 007 OTHER: 011

Card 2/2

ACCESSION NR: AP4038418

S/0166/64/000/002/0031/0037

AUTHOR: Leyderman, A. Yu.; Karageorgiy-Alkalayev, P. M.

TITLE: On the theory of a semiconductor diode with a turn-on back contact

SOURCE: AN UzSSR. Izv. Seriya fiziko-metematicheskikh nauk, no. 2, 1964, 31-37

TOPIC TAGS: semiconductor diode, back contact, diode theory

ABSTRACT: The authors calculated the VA characteristics of a diode with a turn-on back contact. The calculations are based on the expressions for the electron stream across the boundary between a semiconductor and metal

$$j_p(d) = s_p(p(d) - p^o(d)) \quad (1)$$

$$j_n(d) = s_n(n(d) - n^o(d)) \quad (2)$$

By means of mathematical arguments, the authors concluded that the nonhomogeneious conditions on the back contact and the p-n junction might lead to an increase in the speed of carrier recombinations on the contact, as well as to a drop of its volume. The authors take this opportunity to express their gratitude to Prof.

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ACCESSION NR: AP4038418

G. M. Avak'yan for his interest in their work and for the fruitful discussion. Orig. art. has: 1 figure and 38 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UzSSR, Tashkentskiy gosuniversitet inm. V. I. Lenina (Physicotechnical Institute AN UzSSR, Tashkent State University)

SUBMITTED: 02Jul63 DATE ACQ: 05Jun64 ENCL: 00

SUB CODE: EC NO REF SOV: 007 OTHER: 002

Card 2/2

LEYDERMAN, A.Yu.; KARAGEORGIY-ALKALAYEV, P.M.

Effect of blocking contact on the volt-ampere characteristic of a semiconductor diode. Izv. AN Uz. SSR. Ser. fiz.-mat. nauk 8 no.1: 94-95 '64. (MIRA 17:6)

1. Tashkentskiy gosudarstvennyy universitet im. V.I. Lenina.

L 6766-65 EWT(l)/EWG(k)/T Pz-6 IJP(c)/SSD/ASD(a)-5/AFWL/ESD(c)/ESD(...)
RAEM(t) AT

ACCESSION NR: AP4044796 S/0166/64/000/00[illegible]

AUTHOR: Leyderman, A. Yu., Karageorgiy-Alkalayev, P. M.

TITLE: The theory of a semiconductor diode with a non-ohmic rear contact

SOURCE: AN UzSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. [illegible], 1964, 73-74

TOPIC TAGS: diode, semiconductor, modulation, semiconductor diode, rear contact, nonohmic contact

ABSTRACT: The authors consider l-h transitions of the $n-n^+$ type, located in the plane $x=w$ and not limiting the motion of electrons through this plane [illegible] external voltage on transition is given by.

$$V_{n-n^+} = \frac{kT}{q} \ln \frac{n(w)}{n_n};$$

$$(V_{n-n^+} < |V^0_{n-n^+}|)$$

When the current flowing through the entire structure is determined [illegible] of the [illegible]

$$I = I_s e^{\frac{qV}{kT}},$$

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ACCESSION NR: AP4044796

With predominant leakage through the holes in the n-n^+ barrier,

$$I = I_s e^{\frac{qV}{ckT}};\ c = \frac{\operatorname{ch}\frac{w}{L_p}}{b\gamma} + 2, \qquad (3)$$

Transition from characteristics (1) to (2) takes place when there is an increased current running through the diode, due to an improved possibility of leakage. In this paper the authors suggest a new design for a diode which makes the above transition form

$$I = I_s e^{\frac{qV}{ckT}};\ c = \frac{2b + 1 + \operatorname{ch}\frac{w}{L_p}}{b+1} \qquad (4)$$

i.e., the degree of filling of the base is determined by the concentration of adhesion centers and the distribution of their levels. However, when leakage [illegible] there is an increase in the [illegible] filled. When the levels of adhesion [illegible] from the breakdown voltage [illegible]

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L 6766-65
ACCESSION NR: AP4044796

2

through a region with negative resistance. The properties of this device allow it to be controlled by means of light or any other independent source with a surplus of carriers (such as supplemental injection contacts). Orig. art. has: 7 formulas

ASSOCIATION: Tashkentskiy gosuniversitet im. V. I. Lenina (Tashkent State University); Fiziko-tekhnicheskiy institut AN UzSSR (Institute of Physics and Technology, AN UzSSR)

SUBMITTED: 15Nov63 ENCL: 00 SUB

NO REF SOV: 002 OTHER: 003

Card 3/3

LEYDERMAN, A.Yu.; KARAGEORGIY-ALKALAYEV, P.M.

Effect of an antiblocking contact on the volt-ampere characteristics of a semiconductor diode. Izv. AN Uz.SSR.Ser.fiz.-mat.nauk 8 no.4:37-46 '64. (MIRA 18:3)

1. Fiziko-tekhnicheskiy institut AN UzSSR.

LEYDERMAN, A.Yu.; KARAGEORGIY-ALKALAYEV, P.M.

Effect of an anti-locking contact on the voltage-current characteristics of a semiconductor diode. Radiotekh. i elektron. 9 no. 10:1868-1874 O '64.

(MIRA 17:11)

LEYDERMAN, A.Yu.; KARAGEORGIY-ALKALAYEV, P.M.

Theory of semiconductor devices at injection levels. Izv. AN Uz.SSR. Ser. fiz.-mat. nauk 9 no.5:80-82 '65.
(MIRA 18:11)

1. Fiziko-tekhnicheskiy institut AN UzSSR. Submitted August 5, 1964.

L 49803-65 EWT(1)/T/EWA(h) Pz-6/Peb IJP(c) AT
ACCESSION NR: AP5010105 UR/0109/65/010/004/0720/0726

AUTHOR: Leyderman, A. Yu.; Karageorgiy-Alkalayev, P. M.

TITLE: Theory of a semiconductor diode with an antibarrier back control

SOURCE: Radiotekhnika i elektronika, v. 10, no. 4, 1965, 720-726

TOPIC TAGS: semiconductor, semiconductor diode, semiconductor theory

ABSTRACT: Formulas are derived for plotting the current-voltage characteristic of an R-p-n-n^+-R structure with these assumptions: (a) a high injection level in the entire n-base; (b) the continuity equation for minority carriers is [illegible]. Variation of the intensity of electron infiltration through [illegible] [illegible] junction is taken into account. If the base [illegible] prevails, the Hall formula $I \sim e^{qV/2kT}$ holds true. If, however, some [illegible] weighs the base recombination, then for the "long" diode, these formulas [illegible] true: $I \sim e^{qV/nkT}$, $I \sim V^{4}$, $I \sim e^{qV/nkT}$, where $n = (2b+1)/(b+1)$, $(2+b)/$ [illegible]

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L 49803-65
ACCESSION NR: AP5010105

prevailing through p-n and n-n$^+$ contacts, respectively, and with $c > 2$. In the case of a thin diode, the characteristic $I \sim e^{eV/AT}$, $c = 2$ may be preceded by a segment $I \sim e^{eV/AT}$. When both contacts are leaky, the characteristic may be expressed by this formula: $I \sim V^c$. "The authors wish to thank V. I. Stafeev for his valuable advice and discussion of the results." Orig art has [illegible] 54 formulas.

ASSOCIATION: none

SUBMITTED: 11Feb64 ENCL: 00 SUB CODE: EC

NO REF SOV: 006 OTHER: 005

mle
Card 2/2

L 29987-66 EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) JD
ACC NR: AP6012491 SOURCE CODE: UR/0181/66/008/004/1239/1245

AUTHOR: Pavlichenko, V. I.; Ryzhikov, I. V.; Kmita, T. G.; Karageorgiy-Alkalayev, P. M.; Leyderman, A. Yu.

ORG: none

78
B

TITLE: Electroluminescence of silicon carbide diodes

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1239-1245

TOPIC TAGS: silicon carbide, pn junction, diode junction, volt ampere characteristic, photoelectric property, electroluminescence

ABSTRACT: The authors investigated the dependence of the intensity of electroluminescence on the current and voltage in α-SiC (types 4H, 6H, and 21R). The investigated junctions were prepared by separate and simultaneous diffusion of aluminum and boron in the n-type silicon carbide crystals, alloyed beforehand with nitrogen and boron. The results were a pnn^+ structure, with the holes injected through the p-n junctions and the electrons through the $n\text{-}n^+$ contact. The theory of the current dependence of the recombination-radiation intensity in a $p\text{-}n\text{-}n^+$ diode is briefly developed. The lux-ampere and volt-ampere characteristics of the various diodes were measured as functions of the current and voltage on the diode.

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L 29987-66

ACC NR: AP6012491

Most curves exhibited characteristic kinks at different values of the current, indicating that the injection of the electrons in the p region must be taken into account in order to reconcile the experimental data with the theoretical deductions. Orig. art. has: 6 figures and 15 formulas.

SUB CODE: 20/ SUBM DATE: 12Jul65/ ORIG REF: 006/ OTH REF: 007

Card 2/2

ACC NR: AP7001179 SOURCE CODE: UR/0166/66/000/005/0054/0062

AUTHORS: Leyderman, A. Yu.; Karageorgiy-Alkalayev, P. M.

ORG: Physicotechnical Institute, AN UzSSR (Fiziko-tekhnicheskiy institut AN UzSSR)

TITLE: Injection of electron-hole plasma in a semiconductor

SOURCE: AN UzSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 5, 1966, 54-62

TOPIC TAGS: semiconductor theory, solid state plasma, volt ampere characteristic, electron hole, PLASMA INJECTION

ABSTRACT: The behavior of injected carriers in a semiconductor is studied theoretically. For high injection levels and the condition $p > N$, the following expression is derived for the diffusion-controlled approximation

$$\frac{d^2p}{dx^2} - \frac{I\left[(N-F')\frac{dp}{dx} + pF''\right]}{2(b+1)qD_p p^2} - \frac{p}{L_p^2} = 0$$

which, upon further simplification and the assumption

$$E \cong \frac{I}{q\mu_p(b+1)p},$$

reduces to

$$\left(\frac{dE}{dx}\right)^2 + \frac{kT}{qL_D^2}\frac{dE}{dx} - \frac{2}{L_D^2 L_p^2}\left(\frac{kT}{q}\right)^2 \frac{E^2}{E} = 0,$$

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ACC NR: AP7001179

$$E^* = l/[q\mu_p (b+1) N], \quad L_D^2 = \varepsilon kT/(4\pi q^2 N).$$

This equation is solved for two special cases corresponding to different ratios between carrier nonequilibrium lifetime, time-of-flight of electrons, and ohmic relaxation times. Case I is given by the inequality

$$E > 8 \frac{L_D^2}{L_p^2} E^*,$$

which leads to the volt-ampere characteristic given by

$$I = \frac{9}{8} q\mu_p \mu_n \tau \frac{N}{w^3} (V - V_0)^2.$$

Case II is the inverse of Case I and leads to the volt-ampere characteristic

$$I = \frac{2000}{243} \frac{\varepsilon}{4\pi} \frac{\mu_n \mu_p}{w^4} (V - V_0)^3.$$

It is noted that the above equations were derived under conditions of quasi-neutralit A similar analysis for a bimolecular recombination leads to a quadratic dependence of the current on the voltage, or

$$I = \frac{9}{4\sqrt{2}} \frac{qL_D}{kT} \frac{1}{\sqrt{MN}} \frac{q\mu_p (b+1) N}{w^3} V_T^2.$$

Orig. art. has: 66 equations.

SUB CODE: 20/ SUBM DATE: 26May64/ ORIG REF: 006/ OTH REF: 009

Card 2/2

BULGARIA/General Problems of Pathology. Metabolism

Abs Jour : Ref Zhur - Biol., No 13, 1958, No 61088

Author : Karagezov L., Dimitrov L., Chobanova D.
Inst : Medical Institute, Belgrad Academy of Sciences
Title : 17-Ketosteroids in Brain Tumors

Orig Pub : Izv. Med. in-ta Belg. AN, 1956, 13, 477-485

Abstract : Patients with brain tumors (15) have a decreased release of 17-ketosteroids (I). When there is progress in the growth of neoplasm in brain tissues, low concentrations of I are observed more often than when the rumor is localized outside of the brain.

Card : 1/1

KARAGEZOV, R.G.

Dermal vascular reactions in infectious myelitis. Azerb. med. zhur. no.7:70-74 Jl '61. (MIRA 15:1)
(BLOOD VESSELS) (SPINAL CORD—INFLAMMATION)

KARAGEZOV, R.G.

Myelitis in Azerbaijan and some of its clinical forms. Azerb. med. zhur. no.11:27-30 N '61. (MIRA 15:2)
(AZERBAIJAN--SPINAL CORD--INFLAMMATION)

FD -1573

USSR/Biology - Botany

KARAGEZOVA, M.D.

Card 1/1 : Pub. 42-5/11

Author : Karagëzova, M. D.

Title : The relationship between macrosporogeny and the female gametophyte of gymnosperms

Periodical : Izv. AN SSSR. Ser. biol. 5, 66-73, Sep-Oct 1954

Abstract : Investigated the process of reproduction in gymnosperms, chiefly Pinus Nigricans, by means of histological analysis of prepared microsections of ovules. Studied starch reaction and developmental changes occurring after pollination. Drawing; photomicrograms. Nine references: 6 USSR (5 since 1940).

Institution : Agricultural Academy imeni G. Dmitrov, Sofia, Bulgaria

Submitted : March 30 1954

KARAGEZOVA, M. S. Cand Tech Sci -- (diss) "Study of the technology of cultivation of corn by the check-row method." Kiev, 1958. 24 pp; 7 sheets of charts (Ukrainian Acad of Agr Sci. Chair of Operation of Machine and Tractor Park), 100 copies (KL, 14-58, 113)

18.8100 1530,4016

31049
S/126/61/012/004/003/021
E073/E535

AUTHOR: Karagezyan, A.G.

TITLE: Thermal diffusivity and electric resistance of α-titanium and of the titanium alloys T3, T4, BT5 (VT5), T6, T8 within a wide range of temperatures

PERIODICAL: Fizika metallov i metallovedeniye, v.12, no.4, 1961, 507-512

TEXT: The investigations were carried out on the alloys T3, T4, T6, T8 and VT5 and also on pure titanium BT1 (VT1). The alloys T3, T4, T6 and T8 were composed of titanium with additions of aluminium, chromium, iron, silicon and boron. The content of aluminium in the alloys was 3, 4.5, 6 and 7.5 wt.%, respectively. The additions of Cr, Fe, Si and B were maintained constant, totalling 2.5 wt.%. The alloy VT5 contained 95% Ti and 5% Al. The specimens were cylindrical 3 mm diameter, 300 mm long rods. All the specimens were vacuum annealed for five hours at 720°C to remove work hardening. Annealing was carried out on the same equipment as the tests, prior to the measurements, so as to exclude the possibility of work hardening during gripping of the specimens.

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The thermal diffusivity of all the alloys showed a sharp change in the range of 500 to 600°C. From 500°C onwards all the alloys showed a pronounced change of the temperature dependence of the thermal diffusivity. For pure titanium a maximum was observed in the temperature range 270 to 300°C. Thus, the thermal diffusivity is in good agreement with the mechanical properties of the investigated alloys, the operating temperatures of which do not exceed 550°C. The same specimens were used for measuring the electric resistance, which was found to be $69 \cdot 10^{-6}$ Ohm·cm for titanium. Generally, the values obtained by the authors for pure titanium are slightly lower than those published by J. L. Wyatt (Ref.5: Trans.AIMME, 1953, 197, 903) and slightly higher than those published by S. L. Ames and A. D. McQuillan (Ref.4: Acta met., 1954, 2, 831). It was found that, at room temperature, the specific resistance increased with increasing aluminium content. The increase in the resistance with increasing temperature was found to be linear, whereby the temperature coefficient of the electric resistance decreased with increasing aluminium content. In the temperature range 450 to 520°C all the curves showed a discontinuity.

This is attributed to transformations which occur in this temperature range. Microstructural analyses confirmed that such transformations did take place. The temperature coefficient of the electric resistance also showed a change within a sufficiently narrow range of temperatures for all the alloys investigated. Fig.3 shows the temperature dependence of the temperature coefficient of the electric resistance of pure titanium and of the investigated titanium alloys. The scale $\alpha \cdot 10^3$ deg^{-1} applies to pure titanium (curve 1) and the scale $\alpha \cdot 10^4$ deg^{-1} applies to the titanium alloys (T-3 - curve 2, T-4 - curve 3, VT-5 - curve 4, T-6 - curve 5, T-8 - curve 6). Acknowledgments are expressed to V. Ye. Mikryukov for proposing the subject matter of the investigations and for his advice. There are 5 figures, 2 tables and 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc. The English-language references read as follows: Refs.4 and 5 (quoted in text); Ref.6: Greiner E.S. and Ellis W.S. Trans.AIMME, 1949, 180, 657; Ref.7: Michels W.C. and Wilford S.E. Phys.Rev., 1949, 76, 174.

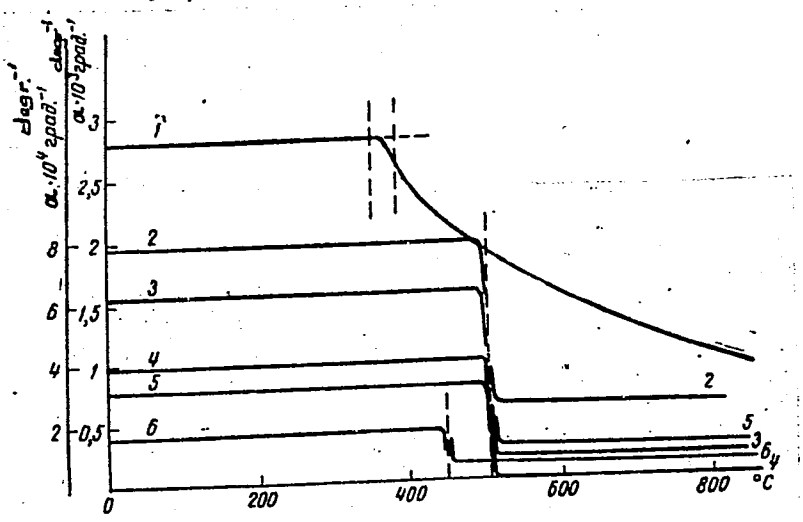
ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova (Moscow State University imeni M.V. Lomonosov)

Thermal diffusivity and ...

31049
S/126/61/012/004/003/021
E073/E535

SUBMITTED: February 8, 1961 (initially)
March 31, 1961 (after revision)

Fig.3



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29996
S/170/61/004/012/006/011
B104/B138

18.8100 also 2408

AUTHORS: Mikryukov, V. Ye., Karagezyan, A. G.

TITLE: Thermal and electrical properties of alloys of the Al-Mg and Al-Cu systems

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 12, 1961, 90- 93

TEXT: The coefficients of thermal conductivity, thermal diffusivity, and of resistivity as well as the Wiedeman-Franz law were studied as functions of temperature in the range between 20°C and melting point. The specimens used were cylindrical rods 3 mm in diameter and 300 mm long, made of cast Al or cast alloys of the Al-Mg and Al-Cu systems. They were first annealed at 430 or 520°C and cooled in the furnace. The electrical resistivity of Al-Mg alloys grows linearly with increasing temperature and with increasing Mg concentration. In all the specimens the temperature coefficient of resistivity was $3.8 \cdot 10^{-3}$. The resistivity of an Al alloy containing 0.7% Mg is $3.5 \cdot 10^{-6}$ ohm·cm^{-1}, and with 8% Mg it is $7 \cdot 10^{-6}$ ohm·cm^{-1}. The resistivity of Al-Cu alloys is a linear function of temperature at Cu con-

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Thermal and electrical properties of ...

centrations of 0.5, 1.0, and 4.0%. At Cu concentrations of 7 and 10% a salient point appears at about 350°C, at which point the temperature coefficient of resistivity was found to increase. Values obtained for the coefficients of thermal conductivity and thermal diffusivity are presented in Figs. 1 - 4. In the temperature range 10 - 500°C, the Wiedeman-Franz law is valid for Al-Mg alloys within the limits of error: $2.45 \cdot 10^{-8}$ w·ohm/deg^2. The same applies to Al-Cu alloys. There are 4 figures and 4 Soviet references.

ASSOCIATION: Gosudarstvennyy universitet im. M. V. Lomonosova, g. Moskva (State University imeni M. V. Lomonosov, Moscow)

SUBMITTED: May 15, 1961

Fig. 1. Thermal conductivity of Al-Mg alloys as a function of temperature. Legend: (1) Al; (2) Al + 0.7% Mg; (3) Al + 3% Mg; (4) Al + 5% Mg; (5) Al + 8% Mg.
Fig. 2. Coefficients of thermal diffusivity of Al-Mg alloys as functions of temperature. Legend: Notations the same as in Fig. 1.

S/137/62/000/001/167/237
A006/A101

AUTHOR: Karagezyan, A. G.

TITLE: Thermal diffusivity and electric resistivity of α-titanium and T-3, T-4, T-5, T-6, T-8 titanium alloys

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 55, abstract 1I386 ("Dokl. AN ArmSSR", 1961, v. 32, no. 4, 213-217, Arm. summary)

TEXT: Thermal diffusivity and electric resistivity of BT-1 (VT-1) grade Ti and heat resistant alloys of Ti with Al, Cr, Fe, Si and B (T-3, T-4, VT-5, T-6 and T-8) were measured on annealed specimens in a vacuum of about 10^{-4} mm Hg. For all the alloys an inflection was observed in the temperature versus thermal diffusivity curve in the region of 500°C. The thermal diffusivity curve of pure Ti has a maximum at 270 - 300°C. ρ of the alloys increases linearly with higher temperatures. The temperature coefficient of electric resistivity drops with higher Al content in the alloy. In the 450 - 520°C range an inflection in the curves of electric resistivity and the temperature coefficient of electric resistivity is observed for all the alloys. Apparently, in this temperature range phase transformation takes place in the Ti proper. The inflection of the

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S/137/62/000/001/167/237
A006/A101

Thermal diffusivity and electric ...

electric resistivity curve for VT-1 at 360 - 400°C is explained by changes in the grain dispersity.

K. Povarova

[Abstracter's note: Complete translation]

Card 2/2

TSATURYAN, A.T.; SARKISYAN, M.A.; TORGOMYAN, A.Kh.; KARAGEZYAN, A.G.

Role of Lamblia in intestinal diseases in children. Zhur. eksp. i klin. med. 3 no.3:81-87 '63. (MIRA 17:1)

1. Institut epidemiologii i gigiyeny Ministerstva zdravookhraneniya Armyanskoy SSR.

KARAGEZYAN, K. G.

"Conditioned Reflex Regulation of Blood Coagulation." Cand Biol Sci, Yerevan State Medical Inst, Yerevan, 1954. (RZH Biol, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

Karagezyan, K. G.

MD

Conditionally reflecting shifts of blood coagulation time with adrenaline excitation. K. G. Karagezyan (Med. Inst., Erevan). *Izvest. Akad. Nauk Armyan. S.S.R. Biol. Sel'skokhoz. Nauki* 8, No. 7, 45-9(1955)(in Russian; Armenian summary, 49-50).—Tests with 4 dogs show that administering adrenaline reduces the time of blood coagulation and an increase in saliva production. I. S. Jolles

USSR/ Medicine - Physiology

Card 1/1 Pub. 22 - 43/56

Authors : Bunyatyan, G. Kh., Act. Memb. of Arm-Acad. of Sc.; and Karagezyan, K. G.

Title : Conditional-reflex shifts of certain sides of the blood coagulation system

Periodical : Dok. AN SSSR 99/5, 831-834, Dec 11, 1954

Abstract : The conditional-reflex changes of blood coagulation were investigated. Blood coagulation was found to be a highly complex fermentation, physio-chemical process participated by numerous ingredients produced by the various organs and tissues of the organism the function of which is controlled by the central nervous system. The changes in the content of calcium, prothrombin, thrombocytes and leucocytes were investigated and the results are described. Twenty-one USSR references (1939-1953). Graphs.

Institution: .....

Submitted : September 28, 1954

KARAGEZYAN, K.G.

USSR/Medicine - Conditioned reflexes

Card 1/1 Pub. 21a - 5/5

Authors : Karagezyan, K. G.

Title : Non-simultaneous shifts in the system of blood coagulation during conditioned reflex stimulations or inhibitions

Periodical : Dok. AN Arm. SSR 20/1, 31-32, 1955

Abstract : Experiments were conducted on eleven dogs to determine the effect of conditioned reflexes on the coagulation of blood, and the amount and time required for coagulation. The inhibiting effect on the changes accompanying the coagulation of blood was also investigated. Six USSR references (1951-1953). Diagrams.

Institution : Erevan' Medical Institute Chair of Biochemistry

Presented by : G. Kh. Bunyatyan, July 17, 1954

MARKARYAN, P.A.; GAMBARYAN, L.S.; KAZAROV, A.P.; KARAGEZYAN, K.G.

Effect of reflexes from the interoceptors on phagocytosis, blood clotting, the quantity of leucocytes and thrombocytes. Dokl. AN Arm. SSR 20 no.4: 155-159 '55. (MLRA 8:7)

1. Nauchno-issledovatel'skiy institut akusherstva i ginekologii Ministerstva Zdravookhraneniya Armyanskoy SSR. Predstavleno L.A. Oganesyanom. (Receptors (Neurology)) (Blood)

MARKARYAN, P.A.; GAMBARYAN, L.S.; KAZAROV, A.P.; KARAGEZYAN, K.G.

Reflex actions from interoceptors on phatocytosis, blood coagulation, and leukocyte and thrombocyte counts. Viziol.zhur. 42 no.4:382-389 Ap '56. (MLRA 9:7)

1. Fiziologicheskaya laboratoriya nauchno-issledovatel'skogo instituta akusherstva i ginekologii Ministerstva zdravookhraneniya Arm. SSSR, Yerevan

(PHAGOCYTOSIS, physiology,
eff. of interoceptive stimulation in dogs (Rus))
(BLOOD COAGULATION, physiology,
same)
(LEUKOCYTE COUNT, physiology,
same)
(BLOOD PLATELETS,
count, eff. of interoceptive stimulation in dogs (Rus))

T-3

USSR / Human and Animal Physiology. Blood.

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3288

Author : Karagezyan, K. G.
Inst : AS Armenian SSR
Title : New Data Pertaining to the Neuro-Humoral Regulation System of Blood Coagulation

Orig Pub : V sb.: Vopr. vyssh. nervn. deyat-sti i compensatorn. prisposobleniy. Vyp. 2, Erevan, AN ArmSSR, 1957, 5-31

Abstract : In the presence of a positive conditioned reflex and development of internal inhibition, variations of blood coagulation time were studied in 11 dogs, as well as the shifts in the values of Ca, prothrombin, thrombocytes, and leukocytes, which all take part in the coagulation process. As unconditioned stimulants, adrenalin, which shortens blood coagulation time, and an electro-cutaneous irritation (pain producing), which stimulates the

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USSR / Human and Animal Physiology. Blood.

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3288

secretion of adrenalin and of similar substances were employed. Administration of a physiological salt solution and the sound of an electric bell connected to the electro-cutaneous irritant were the conditioned stimulants. Blood was taken from the jugular vein of the tested dogs 3 times 1 - 2 minutes following placing of the dog in the machine (control), and 5 and 20 minutes after the manipulations. Under the effect of repeated adrenalin administration and of the electrocutaneous stimulation, acceleration of blood coagulation, reduction of prothrombin time, increase of Ca level and of the number of thrombocytes and leukocytes were noted in the dogs. The action of adrenalin found its external expression in restlessness of the animals, salivation, shortness of breath and mydriasis. Following development in the dogs of a conditioned reflex reaction to adrenalin,

Card 2/3

AUTHOR: Karagezyan, K. G.

20-1-40/58

TITLE: Conditionally-Reflective and Unconditionally-Reflective Shifts in Certain Aspects of the Blood Coagulation System and of the Carbohydrate Metabolism Observed Under the Influence of Different Adrenalin Doses (Bezuslovnoreflektornyye i uslovnoreflektornyye sdvigi nekotorykh storon sistemy svertyvaniya krovi uglevodnogo obmena pri vozdeystvii razlichnykh doz adrenalina).

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 1, pp. 142-145 (USSR).

ABSTRACT: Results and investigations of recent years showed that the times of blood coagulation and prothrombin are substantially shortened under the influence of adrenalin and the electric skin irritant. In this connection the content of calcium, of thrombocytes and leucocytes increases and external signs of the excitation of the animal manifest themselves. Analogous shifts also occurred on application of a conditioned irritation which was formerly coupled with an electric skin irritant. Further isolated action of the conditioned irritant alone leads to the fading of the positive conditionally-reflective reaction and to the process of internal inhibition. On that occasion shifts in an opposite direction than in an unconditionally- and conditionally-reflective excitation developed. In earlier investiga-

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Conditionally-Reflective and Unconditionally-Reflective Shifts in Certain Aspects of the Blood Coagulation System and of the Carbo-hydrate Metabolism Observed Under the Influence of Different Adrenalin Doses.

tions the author found that the shifts in the time of blood coagulation in the case of conditionally-reflective excitation and inhibition are with respect to time not always in accordance with a modification of the content of ingredients of the blood-coagulation system (references 3-7). The author made it his object to find out by means of different adrenalin doses on which member exactly of the blood-coagulation system and of the carbohydrate metabolism the early unconditionally-reflective changes occur; further wether there exists a dependence between the latter and the occurrence of the conditionally-reflective shifts in the corresponding member when a conditioned reflex forms. The tests were performed with 6 male dogs. Time of blood-coagulation, time of prothrombin, activity of proteases, quantitative shifts of the calcium-ions, of thrombocytes, leucocytes and erythrocytes, further glucose and pyroacemic acid, as components of the carbohydrate metabolism, were determined. After a uniform control-background had been obtained, the author before the corresponding manipulations and 5 as well as 2o minutes after them, took blood from the zygomatic vein where adrenalin was also introduced. The result showed that the time of blood coagulation is the most sensitive index; it is even shortened by introduction of 1 γ

adrenalin. No parallelism in shifts of content of other ingredients was found to exist. A graduate increase in the dose of adrenalin led to the introduction of further ingredients into the unconditionally-reflective reaction. From this follows that the time of blood-coagulation sensitive to the slightest doses of adrenalin is probably guaranteed by finer and more sensitive mechanism than is the case in other indices described here. Among the components of the carbohydrate metabolism lactic acid is most sensitive to small doses of adrenalin. In most cases the shifts of the level of glucose, the quantity of erythrocytes, of anorganic phosphorus and adenosin-triphosphoric acid are last included in the unconditionally- and conditionally-reflective reaction. The blood-coagulation system is supposed to play a more important biological part in the organism, as it is more sensitive to adrenalin in comparison to the system of carbohydrate metabolism. These investigations do not give a final answer to all problems posed by the author, but they create certain conditions for their further examination.
There are 13 Slavic references.

Conditionally-Reflective and Unconditionally-Reflective Shifts 20-1-40/58
im Certain Aspects of the Blood Coagulation System and of the Carbohydrate Metabolism Observed Under the Influence of Different Adrenalin Doses.

ASSOCIATION: Institute for Physiology AN Armenian SSR (Institut fiziologii Akademii nauk Arm SSR).

PRESENTED: September 21, 1957, by L. A. Orbeli, Academician.

SUBMITTED: August 28, 1957.

AVAILABLE: Library of Congress.

Card 4/4

KARAGEZYAN, K.G.

Changes in the time of blood coagulation and fibrinogen concentration caused by subliminal, liminal, and massive doses of adrenaline in case of a positive conditioned adrenaline reflex and internal inhibition. Vop. biokhim. 1:119-127 '60. (MIRA 14:12)

1. Department of Biochemistry, Academy of Sciences of Armenian S.S.R., Erevan.
(BLOOD--COAGULATION) (ADRENALINE) (CONDITIONED RESPONSE)

KARAGEZYAN, K.G.; SAAKYAN, S.S.

Effect of various doses of adrenaline and gamma aminobutyric acid on the arteriovenous difference in blood clotting, prothrombin time and thromboplastic activity. Vop. biokhim. moz. 1:163-172 '64. (MIRA 18:9)

1. Institut biokhimii AN ArmSSR.

BUNYATYAN, G.Kh., akademik; KAZARYAN, B.A.; KARAGEZYAN, K.G.; GULYAN, E.A.

Penetration of γ-aminobutyric acid through hematoencephalic barrier. Dokl. AN Arm. SSR 40 no.5:289-293 '65.

(MIRA 18:7)

1. Institut biokhimii AN ArmSSR. 2. AN ArmSSR (for Bunyatyan).
Submitted March 1, 1965.

KARAGEZYAN, M.A.; POTOTSKIY, I.I., red.

[Stimulus role of intrasternal blood transfussions in the treatment of syphilis] Stimuliruiushchaia rol' vnutrigrudinnykh transfuzii krovi v terapii sifilisa. Pod red. I.I.Pototskogo. Krasnodar, Sovetskaia Kuban', 1957. 133 p. (MIRA 11:4)
(SYPHILIS) (BLOOD--TRANSFUSION)

USSR / Pharmacology. Toxicology. Vitamins. V

Abs Jour : Ref. Zhur - Biologiya, No. 5, 1959, 13951

Author : Pototskiy, I.I.; Karagezyan, K.A.
Inst : -
Title : Experience with Treatment of Various Skin Diseases with Carotene

Orig Pub : Nauchn. zap. po dermatol. i venerol. vrachey Kubani, 1958, vyp. 2, 111-116

Abstract : No abstract

Card 1/1

KARAGEZYAN, M.A., kand.med.nauk; ANTONIK, N.N., ordinator; ULITINA, I.A., ordinator

Treatment of trophic ulcers with an oil preparation of carotene. Vest.derm. i ven. no.1:30-33 '62. (MIRA 15:1)

1. Iz kliniki kozhnykh bolezney (zav. kafedroy - doktor med.nauk L.A. Neradov) Kubanskogo meditsinskogo instituta (dir. - prof. V.K. Suprunov) i Krasnodarskogo gorodskogo kozhno-venerologicheskogo dispansera (glavnyy vrach I.F. Frintchenko).
(CAROTENE) (ULCERS)

KARAGEZYAN, M.A., kand. med. nauk; NESTEROVA, V.P.; VATUL'YAN, K.A.

Prevention of occupational dermatoses in workers of the Krasnodar Plant of Measuring Instruments. Nauch. trudy Kub. gos. med. inst. 19:40-47 '62. (MIRA 17:8)

1. Iz kafedry kozhnykh i venericheskikh bolezney (zaveduyushchiy - prof. L.A. Neradov) Kubanskogo gosudarstvennogo meditsinskogo instituta.

NERADOV, L.A., prof.; KARAGEZYAN, M.A., dotsent

Dispensary treatment of foot epidermophytosis. Vest. derm. i ven. 37 no.12:49-52 D '63 (MIRA 18:1)

1. Klinika kozhnykh bolezney (zav. L.A. Neradov) Kubanskogo meditsinskogo instituta.

KARAGEZYAN, M.A., kand. med. nauk; BORISOVA, A.A., kand. med. nauk

Medicinal properties of squash carotene in skin diseases.
Vest. derm. i ven. 38 no.12:49-51 D '64. (MIRA 18:8)

1. Kafedra kozhnykh bolezney (zav.- prof. L.A. Neradov) Kubanskogo meditsinskogo instituta i Krasnodarskiy gorodskoy venerologicheskiy dispanser (glavnyy vrach I.N. Shirkov).

KARAGEZYAN S.

M

Country : USSR
Category: Cultivated Plants. Commercial. Oil-Bearing. Sugar-Bearing.

Abs Jour: RZhBiol., No 22, 1958, No 100372

Author : Karagezyan, S.
Inst : -
Title : Cotton Variety 147-f.

Orig Pub: Ayastani koltntesakan, Kolkhoznik Armenii, 1958, No 3, 7-8

Abstract: No abstract.

Card : 1/1

M-114

MNDZHOYAN, A.L.; AFRIKYAN, V.G.; KHORENYAN, G.A.; VASIL'YEVA, T.N.; ZHURULI, L.D.; KARAGEZYAN, S.G.

Derivatives of furan. Report No.28: Some thiosemicarbazones and semicarbazones of the furan series as possible antituberculosis drugs. Izv.AN Arm. SSR. Khim.nauki 15 no.4:391-397 '62. (MIRA 15:11)

1. Institut tonkoy organicheskoy khimii AN Armyanskoy SSR.
(Semicarbazones) (Furan) (Tuberculosis)

KARAGIAUROV, Liubomir, inzh.

Automation and measuring instruments in the Maritsa-Iztok I Thermoelectric Plant. Elektroenergiia 13 no.5/6:44-47 My-Je '62.

KARAGIN, A.

Progressive principles of planning the cities of the Federation.
Na stroi. Ros. no.11:35-36 N '61. (MIRA 16:7)

1. Direktor Lengiprogora.

(City planning)

KARAGIN, A., inzh.

Residential and public buildings made from three-dimensional elements. Na stroi.Ros. no.1:14-15 Ja '61. (MIRA 14:6)
(Precast concrete construction) (Buildings, Prefabricated)

KARAGIN, B.A.

Case of asphyxition resulting from a fall into dry cement.
Sud.-med.ekspert. 6 no.1:54-55 Ja-Mr '63. (MIRA 16:2)

1. Kafedra sudebnoy meditsiny (zav. - prof. V.I. Belyayev)
Yaroslavskogo meditsinskogo instituta.
(ASPHYXIA)

KARAGIN, B. A.

Cand Med Sci - (diss) "Legal medical examination of injuries from homemade firearms." Gor'kiy, 1961. 17 pp; (Gor'kiy Med Inst imeni S. M. Kirov); 300 copies; price not given; (KL, 10-61 sup, 224)