KAZARIN, V.S.

Diagnostic value of the tellurite test in diphtheria. V. S. Kazarin (I. V. Stalin 2nd Moscow Med. Inst.) ... 1955, ... 5, 41 ... The tellurite test ... salts ... detection of diphtheria ... was shown to be about 92 ... [illegible]

... tellurite ... advised. G. M. Kosyan ...

Clinic of Children's Infectious Diseases ...

KAZARIN V.S.

EXCERPTA MEDICA Sec.12 Vol.12/4 Ophthalmology April 58

647. CLINICAL FEATURES AND TREATMENT OF OCULAR DIPHTHERIA IN CHILDREN (Russian text) - Kazarin V.S. Clin. of Children's Infect. Dis. of the Sec. Med. Inst., Moscow - VOP. PEDIAT. 1956, 1/4 (7-13)

Forty-two patients with diphtheria of the eye were treated; most were received into the hospital on the 6th day and later on account of late diagnosis. The affection was unilateral in 26 patients, more often in the right eye. The catarrhal form of ocular diphtheria was seen in 4 patients, the croupous form in 36 and the dystrophic form in 2. The catarrhal form pursues the mildest clinical course, but is most

difficult to diagnose. The leading symptoms are: acute onset, rise in temperature, well-marked signs of toxaemia, palpebral oedema and redness, hyperaemia, swelling and tenderness of the conjunctiva, some difficulty in everting the lid, absence of photophobia, moderate sanguino-purulent discharge from the eye, rapid development of fairly thick glistening greyish-white films of variable size in the palpebral conjunctiva and injection of the scleral vessels. Localized or diffuse cloudiness of the cornea was observed rarely in the croupous form, but more or less constantly in the dystrophic form of diphtheria. In the treatment of the catarrhal form of ocular diphtheria the therapy may be confined to a single injection of 10,000-15,000 A. U. of antitoxic serum. In the case of the croupous and especially the diphtheritic forms, vigorous treatment is needed, viz.: repeated injections of serum (up to 40,000-80,000 A. U.), exhibition of tonics, penicillin injections and local therapy. In view of the fact that in some cases diphtheria bacilli were discovered in swabs not only from the eye but also from the pharynx and nose, repeated checking-up of swabs taken from the pharynx and nose is always necessary.

Lubenskaya - Leningrad (S)

KAZARIN, Vladimir Sergeyevich

[How to prevent angina in children] Kak predupredit' anginu u detei. Moskva, Medgiz, 1958. 17 p.

(MIRA 13:12)

(RESPIRATORY ORGANS--DISEASES)

KAZARIN, V.S., kand. med. nauk

One of the methods for preventing biting through of the thread in intubation patients. Pediatriia 36 no.11:77 N '58. (MIRA 12:8)

1. Iz kliniki detskikh infektsionnykh bolezney II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova na baze Detskoy klinicheskoy bol'nitsy No.1.
(LARYNX--INTUBATION)

NISKVICH, N.I.; KAZARIN, V.S.

New advances in the treatment of anginas in children. Vop.okh. mat.i det. 5 no.4:28-32 Jl-Ag '60. (MIRA 13:7)

1. Iz kliniki detskikh infektsionnykh bolezney (zav. - prof. D.D. Lebedev) II Moskovskogo meditsinskogo instituta im. N.I. Pirogova (dir. - dotsent M.G. Sirotkina).
(TONSILS--DISEASES)

KAZARIN, V.S.; VERBENKO, A.A.; PROKHOROVA, L.V.

Diphtheria of the genitalia in girls and women. Vop. okh. mat. i det. 6 no. 2:83-85 F '61. (MIRA 14:2)

1. Iz kliniki detskikh infektsionnykh bolezney (zav. - zasluzhennyy deyatel' nauki prof. D.D. Lebedev) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova (dir. - dotsent M.G. Sirotkina) i poliklinik No. 3 Ministerstva zdravookhraneniya SSSR.
(GENERATIVE ORGANS, FEMALE--DISEASES) (DIPHTHERIA)

KAZARIN, V.S.; GASPARYAN, M.O.

Anginas in children caused by a yeastlike fungus from the genus Candida. Sov. med. 25 no.2:38-42 F '62. (MIRA 15:3)

1. Iz kliniki detskikh infektsionnykh bolezney (zav. kafedroy - prof. D.D. Lebedev) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova (dir. - dotsent M.G. Sirotkina) na baze Detskoy klinicheskoy bol'nitsy No.1 (glavnyy vrach Ye.M. Prokhorovich).
(MONILIASIS)
(PHARYNX--DISEASES)

KAZARIN, V.S.

All-Union Conference on Hospital Service in the U.S.S.R. Vop. okhr. materin. dets. 8 no.1:91-93 '63 (MIRA 17:2)

GAABE, Yu.E.; KAZARINA, A.K.; KIPERMAN, G.Ya.; MALYI, I.G.; ROZENTAL', O.E.; KOROTKOV, A.F., retsenzent; TITEL'BAUM, N.P., retsenzent; TRUKHANOVA, A.N., red.; IL'YUSHENKOVA, T.P., tekhn. red.

[The theory of statistics] Teoriia statistiki. [By] IU.E. Gaabe i dr. Pod red. I.G.Malogo. Moskva, Iskusstvo, 1963. 398 p. (MIRA 16:5)
(Statistics)

KAZAKINA, F.N.

KAZARINA, A.N.; ANTROPOVA, V.N.

Effect of certain cortical and subcortical stimulants upon the development of streptococcal skin infections. Zhur.mikrobiol.epid.i immun. no.4:80 Ap '54. (MLRA 7:5)

1. Iz Odesskogo kozhno-venerologicheskogo instituta im. Glavcha.
(Narcotics) (Cerebral cortex) (Streptococcus)

KAZARINA, A.N.

USSR / Pharmacology, Toxicology. General Problems U-1

Abs Jour : Ref. Zh.-Biol., No 2, 1958, No 7880

Author : Kazarina, A.N.

Inst :

Title : The Effect of Certain Pharmacological Agents Acting on the Central Nervous System on Streptococcal Skin Involvement in Rabbits.

Orig Pub : V. Sb.: Sovrem. vopr. dermatol., Kiyev, Gosmedizdat USSR, 1957, 23-27

Abstract : Experiments were performed on 90 rabbits, 1.2 billions microorganisms, obtained from a 24 hour culture of the hemolytic Streptococcus, were injected intracutaneously in the ears and thighs of all the animals. 75 rabbits were given various pharmacological agents daily during 1 month, while the

Card : 1/2

USSR/Microbiology - Antibiosis and Symbiosis. Antobiotics. F-2

Abs Jour : Ref Zhur - Biologiya, No 7, 1957, 26304

Author : Belikov, G.P., Kudryavtseva, T.T., Antonova, A.A., Gugnyayev, I.E., Kazarina, E.N.

Inst :

Title : Resistance of Dysentery Bacillus to Syntomycin, Streptomycin, and Biomycin (An Attempt at Comparative Study of Dyenteric Strains Isolated in 1953 in MOscow and Kishinev).

Orig Pub : Zh. mikrobiol., epidemiol., i immunobiologii, 1956, No 2, 35-41

Abst : Of the 800 strains of dyesentery bacillus isolated in dysentery patients, 15.3% were found to be resistant to syntomycin (I). Most of the resistant strains were obtained from patients treated with I. Strains resistant to biomycin (II) and streptomycin (III) were not found. A comparative study of the sensitivity of

Card 1/2

Card 2/2

SHAYEVICH, A.B.; DANILEVSKAYA, V.V.; ZHOROVA, N.I.; KAZARINA, G.P.; TOROVINA, A.G.

Spectrographic determination of hydrogen in nickel and copper and of oxygen in copper. Zav. lab. 30 no.11:1343-1346 '64 (MIRA 18:1)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.

KAZARINA, L. G.

"Experience in the Use of Tissue Therapy in Diseases of the Ear." Cand Med Sci, Second Moscow State Medical Inst imeni I. V. Stalin, 1 Nov 54. (VM, 20 Oct 54)

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

SO: Sum. 481, 5 May 55

CHAGIN, P.; TAVADZE, Ye.; FOMICHEV, N.; KAZARINA, N.

Material incentives and the quality of production; discussing the practice of the Kalinin textile workers. Sots.trud 7 no.7:113-121 Jl '62. (MIRA 15:8)

1. Nachal'nik otdela truda Pavlovo-Pokrovskoy fabriki (for Chagin). 2. Direktor Tbilisskogo kamvol'no-sukonnogo kombinata "Sovetskaya Gruziya" (for Tavadze). 3. Direktor Shchelkovskogo khlopchatobumazhnogo kombinata (for Fomichev). 4. Nachal'nik otdela truda Shchelkovskogo khlopchatobumazhnogo kombinata (for Kazarina).

(Textile industry--Quality control)
(Bonus system)

LIVYY, G.V.; GAL'PEROVICH, M.G.; VASILYUK, N.Z.; SOPRIKO, A.Ye.; KAZARINA, N.I.; CHURINA, V.I.; GIL'MAN, B.A.; YEGOROV, K.A.; GONCHAR, Ye.G.

Method of refining the skin side of fur articles made with low grade peltry; Soviet Certificate of Inventions No.147290. Kozh.-obuv.prom. 4 no.8:43 Ag '62. (MIRA 15:8)
(Fur industry—Technological innovations)

KAZARINA, N.N.

Growing number of V.V. Gaganova's followers. Tekst. prom. 19 no.9:51-52 S '59. (MIRA 12:12)

1. Nachal'nik otdela truda Shchelkovskogo khlopchatobumazhnogo kombinata.
(Efficiency, Industrial) (Textile industry)

KAZARINA, N.N.

Work practices after the introduction of a shoter workday.
Tekst.prom. 20 no.7:13-15 Jl '60. (MIRA 13:7)

1. Nachal'nik otdela truda Shchelkovskogo khlopchatobumazhnogo kombinata.
(Shchelkovo--Textile factories)

KAZARINA, N.N., inzh.; GIL'MAN, B.A., inzh.; SLYUNIN, V.S., inzh.

New method of degreasing greasy sheep pelts. Izv.vys.ucheb.zav.; tekh.leg.prom. no.2:29-32 '61. (MIRA 14:5)

1. Rekomendovana kafedroy tekhnologii kozhi Kiyevskogo tekhnologicheskogo instituta legkoy promyshlennosti.
(Hides and skins)

KAZARINA, N.N., inzh.; SHIFMAN, R.O., inzh.; GIL'MAN, B.A., inzh.; RUDENKO, S.D., inzh.

Simplified method of determining the content of fatty substances in leather and fur. Kozh.-obuv.prom. 4 no.8:28-29 Ag '62. (MIRA 15:8)

(Leather) (Fur)

LIVYY, G.V.; KAZARINA, N.N.; GIL'MAN, B.A.; RUDENKO, S.D.; DREVINA, N.G.; [redacted], N.S.; ALPATSKAYA, V.P.; KOZLOVSKIY, S.I.; SLYUNIN, B.S.

Development and application of reinforced film coating of sheepskins for coats. Kozh.-obuv.prom. 4 no.3:25-28 Mr '62. (MIRA 15:5)
(Fur--Dressing and dyeing)

LIVYY, G.V., kand.tekhn.nauk; KAZARINA, N.N., inzh.; BRAGINSKIY, M.A., inzh.
SUKHOREBRYY, V.A., inzh.

Continuous diffusion of tanning materials in a rotating diffuser unit. Nauch.-issl.trudy Ukr NIIKP no.13:68-76 '62.

(MIRA 18:2)

LIVYY, G.V., kand. tekhn. nauk; KAZARINA, N.N., inzh.; GIL'MAN, B.A., inzh.; FASTOVETS, O.S., inzh.; MOROZYUK, N.I., inzh.; LITVINOV, Sh.I., inzh.; SAGAYDACHNYY, V.G., inzh.; BALAYEV, Ya.V., inzh.; FITSA, A.S., inzh.

Manufacture of leather for lining and accessories from the face split of DOL type pigskins. Kozh.-obuv. prom. 7 no.6: 29-32 Je '65. (MIRA 18:8)

KAZARINA, N.N.; SLUTSKIN, S.M.

Discussion on norms in the section of the Scientific and Technical Society. Tekst. prom. 25 no.12:79-80 D '65. (MIRA 19:1)

LIVYY, G.V., kand. tekhn. nauk; FISH, B.I.; GORKUN, Yu.P.; LAZARINA, N.N.; GIL'MAN, B.A.

Utilization of sheep pelts unsuitable for the production of fur in the manufacture of chrome leather for shoe uppers and lining. Kozh.-obuv. prom. 7 no.12:12-14 D '65. (MIRA 19:2)

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SOV/137-58-5-11661

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, pp 311-312 (USSR)

AUTHORS: Rudnevskiy, N.K., Kozlova, N.V., Kazarina, T.P.

TITLE: Using a Spark and an Arc for Investigations Into the Dependence of the Intensity of Magnesium and Aluminum Lines on Their Concentration in a Binary Magnesium - Aluminum Alloy

PERIODICAL: Uch. zap. Gor'kovsk. un-ta, 1958, Nr 32, pp 161 - 167

ABSTRACT: The authors investigated the dependence of the absolute and the relative intensity of Mg and Al lines on their concentration in an Mg-Al alloy. A spark collected by the Rayskiy circuit and an a-c arc of the Sventitskiy circuit were used as sources for the spectrum excitation. Mg-Al alloys contained 2.3 - 9.8% Al. The specimens were bar-shaped having 1.5 x 4.5 x x 3 cm dimension. The photographic records of the spectrum were made with an ISP-22 spectrograph. When analyzing Mg-Al alloys in the a-c arc, compared to the spark, changes in the current of its composition cause greater changes in the absolute intensity

Card 1/2

SOV/137-59-5-11661

Using a Spark and an Arc for Investigations Into the Dependence of the Intensity of Magnesium and Aluminum Lines on Their Concentration in a Binary Magnesium - Aluminum Alloy

of the alloy base lines, while the absolute intensity of Mg arc and spark lines remains practically unchanged in the spark of the investigated Mg concentration range, the changes in the arc are substantial. The character of changes in the intensity of Mg arc and spark lines is different. This may be explained by changes in the arc discharge temperature. It is shown that in the a-c arc the dependence of absolute and relative intensity of the Al I 3082.16 Å arc line on the Al concentration in the alloy (2 - 10%) is not described by Lomakin's formula, but by the exponential formula $J = Ae^{kc}$, where A and k are constant values, and c is the Al concentration in the alloy.

A.Sh.

Card 2/2

KAZARINOV, A.I.

Example of the orthogenetic connection between gold ore formation and intrusions. Biul. MOIP. Otd. geol. 34 no.6:145-146 N-D '59. (MIRA 14:3)

(Aldan Plateau—Gold ores)

KAZARINOV, A. P.

5761. Sobol' Dal'nego Vostoka. Khabarovsk, Kn. izd., 1954. 120s. s ill. 20sm. 3.000 ekz 3r 35k. Bibliogr: s. 117-119-(55-1008) p. 639.113.5 (57.34) +(016.3)

SO: Knizhnaya, Letopis, Vol. 1, 1955

KAZARINOV, A. P., Cand Biol Sci -- (diss) "Sable Martes zibellina L. 1758 of the Far East . (Systematics, ecology, biology, ~~trade~~ commercial qualities, ~~renewal~~ restoration of ~~supplies~~ stocks, and their utilization)." Vladivostok, 1959. 16 pp (Far Eastern Affiliate im V.L. Komarov of the Siberian ~~Branch~~ Dept of the Acad of Sci USSR). 150 copies (KL,37,59, 107)

27

GUBARI, Fabian Grigor'yevich; KAZARINOV, V.P., nauchnyy red.; KELAREV, L.A., vedushchiy red.; GENNAD'YEVA, I.M., tekhn. red.

[Geology, and oil and gas potentials of the Ob'-Irtysh interfluve] Geologiia i perspektivy neftegazonosnosti Ob'-Irtyshskogo mezhdurech'ia. Leningrad, Gos. nauchno.-tekhn. izd.-vo neft. i gornotoplivnoi lit-ry. Leningr. otd-nie, 1959. 172 p. (Sibirskii nauchno-issledovatel'skii institut geologii, geofiziki i mineral'nogo syr'ia. Trudy, no.3) (MIRA 12:12)
(Ob' Valley--Petroleum geology)
(Ob' Valley--Gas, Natural--Geology)
(Irtysh Valley--Petroleum geology)
(Irtysh Valley--Gas, Natural--Geology)

KAMENSHCHIKOV, Grigoriy Georgiyevich; KOLTUN, Sergey Ivanovich, inzh.; NAUMOV, Vasiliy Prokhorovich, inzh.; CHERNOBROVKIN, Boris Sergeyevich, inzh.; POLYAKOV, V.P., inzh., retsenzent; KAZARINOV, B.K., inzh., retsenzent; KON'KOV, A.S., dotsent, red.; DUGINA, N.A., tekhn.red.

[Forging operations] Kuznechnoe proizvodstvo. Izd.3., ispr. i dop. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 447 p. (MIRA 12:8)

1. Uralmashzavod (for Koltun, Chernobrovkin). 2. Sverdlovskiy zavod transportnogo mashinostroyeniya (for Naumov).
(Forging)

KAZARINOV, Boris Nikolayevich

KOLTUN, Sergey Ivanovich; KAZARINOV, Boris Nikolayevich; KAYDALOV, P.K., inzhener, retsenzent; DUGINA, N.A., tekhnicheskiy redaktor.

[Improvements in forge shops; practices of the Ural Machine Manufacturing Plant] Usovershenstvovaniia v kuznechnom tsekhe; iz opyta Uralmashzavoda. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1956. 51 p. (MLRA 10:6)
(Forging machinery)

KAZARINOV, B.N., inzhener.

Blacksmith M.N. Kuskov. Mashinostroitel' no.11:33-34 N '57.
(MIRA 10:10)

(Kuskov, Mikhail Nikhanorovich)

KAZARINOV B.N.

PHASE I BOOK EXPLOITATION 1042

Ural'skiy zavod tyazhelogo mashinostroyeniya, Sverdlovsk

Kovka i termicheskaya obrabotka (Forging and Heat Treatment) Moscow, Mashgiz, 1958. 132 p. (Series: Its Sbornik statey, vyp 5) 6,000 copies printed.

Ed.: Kvater, I.S., Engineer; Tech. Ed.: Dugina, N.A.; Ed. (Ural-Siberian Division, Mashgiz): Sustavov' M.I., Engineer.

PURPOSE: This book is intended for engineers and technicians working in the field of forging and heat-treating of metals.

COVERAGE: The book presents material which reflects the achievements of Uralmashzavod (Ural Heavy Machine-building Plant imeni S. Ordzhonikidze) in the field of forging and heat-treating of metals. Various improvements in production methods, mechanization and automation of forging and heat-treating processes, application of various methods of inspection of forgings and elimination of rejects are described. Specific information on improvements in

Card 1/4

forging and heat-treating of large parts such as turbine discs and rotors, cold-rolling-mill rolls, and crankshafts are presented. Descriptions are given of the results of new studies undertaken with a view to elimination of rejects and improvement of the quality of parts, determination of residual stresses at various cooling speeds, data on the efficiency of ultrasonic inspection and the effect of degassing of molten steel on the quality of forgings. The book was prepared by the members of the plant organization of NTOmashprom in connection with the 25th anniversary of the Ural Heavy Machine-building Plant.

TABLE OF CONTENTS:

Card 2/4

ABSTRACT: Measures undertaken to mechanize difficult and labor-consuming processes are described together with the specifications, the design, and the performance of the following facilities: A floor-level forging manipulator; a mechanism permitting automatic control of the drop hammer; an electrical buggy equipped with a turntable; combined roll table supports for forging of rings; special cover plates for the gripping jaws of the manipulator to facilitate the gripping of billets during forging of strip.

Card 3/4

AVAILABLE: Library of Congress

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Card 4/4

AUTHOR: Kazarinov, B.N., Engineer SOV/122-58-6-14/37

TITLE: Examples of Mechanisation of Hand-forging Operations at the Ural Machinery Plant (Primery mekhanizatsii svobodnoy kovki na Uralmashzavode)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 6, pp 41-42 (USSR)

ABSTRACT: Examples are illustrated of manipulating and transporting equipment designed and built for the mechanisation of hand-forging operations. These include an electrically propelled carriage with a rotary table mounted on balls, a 2-ton manipulator used in the rolling of rings from forged and pierced blanks and a 2-ton gripping manipulator, controlled by a single operator.
There are 4 figures.

1. Industrial plants--Equipment 2. Materials--Handling

Card 1/1

SHESTAKOV, Andrian Andrianovich; LEVANDOVSKIY, P.G., inzh., retsenzent; KAZARINOV, B.N., inzh., red.; PUCHKOV, S.G., inzh., red.; DUGINA, N.A., tekhn.red.

[Steam and pneumatic hammer operator] Mashinist parovozdushnogo molota. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 118 p. (MIRA 12:4)
(Forging machinery)

KOLTUN, Sergey Ivanovich; BORINSKIY, Mikhail L'vovich; KATKOV, Leonid Ivanovich; KAZARINOV, Boris Nikolayevich; KATKOV, N.P., inzh., retsenzent; BASSEYN, V.V., inzh., retsenzent; KATKOV, I.S., inzh., red.; YERMAKOV, N.P., tekhn.red.

[Mechanization of minor processes in press forging plants] Malaia mekhanizatsiia kuznechno-pressovykh tsekhov; al'bom chertezhei. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1960. 104 p. (MIRA 14:2)
(Forge shops--Equipment and supplies)

KAZARINOV, B.N.

"Mechanisms, devices and means of mechanizing press forging operations" by V.N. Smirnov, P.M. Pavlovich. Reviewed by B.N.Kazarinov. Kuz.-shtam. proizv. 3 no.11:46-47 N '61. (MIRA 14:11)
(Forging machinery) (Sheet metal working machinery)
(Smirnov, V.N.) (Pavlovich, P.M.)

ACCESSION NR: AP4034598 S/0182/64/000/004/0005/0007

AUTHORS: Kazarinov, B. N.; Shaburov, V. Ye.

TITLE: Investigation of the process of closing axial defects by upsetting

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 4, 1964, 5-7

TOPIC TAGS: forging, defect structure, defect formation, lead, steel, steel mill/ UIM50 testing machine, U7 steel

ABSTRACT: The authors proposed and elaborated the method of upsetting for use in closing axial defects in steel and lead. The influence of nonhomogeneity of deformation on both the closing of defects and on the strain condition of the sample and the dependence of defect closing upon sample size and form were also investigated. The samples (made from U7 steel and white lead) were cylindrical, with a circular orifice cut into the axis of each sample. Testing was carried out with testing machine UIM-50; samples were placed in a special container (see Fig. 1 on the Enclosure) for use in conjunction with the testing machine. A photographic record shows the sequential steps in the closing of defects and gives recordings of the change in H/D ratio. The authors present a schematic diagram showing the mechanism of defect closing. It is concluded that: 1) the magnitude of the H/D

Card 1/3

ACCESSION NR: AP4034598

ratio is the basic factor influencing axial defect closure, 2) defect closure occurs irregularly, beginning in the defect center and distributing itself to the contact surface due to nonhomogeneous deformation, and 3) with increasing non-homogeneity of deformation, caused by contact friction, defect closure occurs more intensely and increases with greater H/D ratio. Orig. art. has: 3 figures, 4 photographs, and 1 equation.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 01

SUB CODE: MT, MM

NO REF SOV: 003

OTHER: 001

Card 2/3

ACCESSION NR: AP4034598

ENCLOSURE: 01

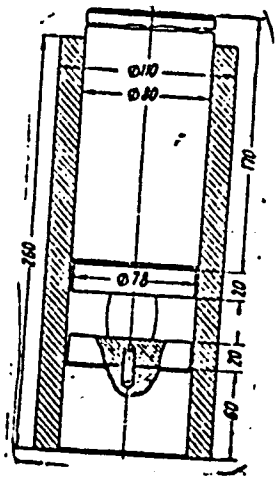


Fig. 1.
Container

Card 3/3

L 20241-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)

ACCESSION NR:

Iskrivenko, Ya.

Improved technology for forging EI437 alloy

SOURCE: Kuznechno-shtampovochnoye proizvodstvo

TOPIC TAGS: nickel alloy, EI437BU alloy, Nimonic alloy, forging, die shape, forging technique, mechanical

(Nimonic 80A type) alloy were cast

in the experiments

similarly

on the basis of the experimental

were sele

were heated

Card 1/

L 20241-65
ACCESSION NR: AP5001777

In 20—25 hr and forged into 220-mm round or 200 x 2[illegible]-mm [illegible] billets without reheating. The forging was [illegible] forged by the above technique had a tensile strength [illegible], a reduction of area [illegible] and [illegible] [illegible] rather than [illegible] [illegible] figures and 2 tables

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 000 ATD PRESS: [illegible]

Card 2/2

L 20776-66 EWT(m)/EWP(w)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/ETC(m)-6 JD/HW/EM

ACC NR: AP6004679 SOURCE CODE: UR/0182/65/000/010/0001/0006

AUTHOR: Kazarinov, B. N.; Okhrimenko, Ya. M.

ORG: none

TITLE: Improvements in the process of forging turbine disks from EI437BU alloy

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 10, 1965, 1-6

TOPIC TAGS: turbine disk, drop forging, hot forging, metal grain structure / EI437BU Cr-Ni high-temperature alloy, solid mechanical property

ABSTRACT: The turbine disks forged from EI437BU Cr-Ni high-temperature alloy display some nonuniformity of mechanical properties and stress-rupture strength owing chiefly to their consertal structure; this may be offset by properly adjusting the forging technology, the paramount objective being to reduce to a minimum the danger of the formation of internal cracks in the finished elements (turbine disks). In this connection, the authors describe new experimental techniques for processing 700-kg ingots of EI437BU alloys into turbine disks. The blanks used are round rather than square, and this eliminates the possibility of the rise of axial cracks during the rounding process. Moreover, the hot upsetting of round blanks proceeds more uniformly, particularly when their height-to-diameter ratio is <2.5. Following their hot upsetting the blanks are heated to 1150±10°C in two-chamber gas furnaces and then drop-forged in dies heated to 250-300°C and lubricated with dry sawdust. The princi-

Card 1/2

UDC: 621.73.032

L 20775-66

ACC NR: AP6004679

pal advantage of the new technique appears to be the replacement of square blanks with round blanks, since comparison tests showed that disks forged from round blanks (diameter 220 mm) display superior mechanical properties and more uniform macrostructure before and after heat treatment (hardening at 1080°C for 8 hr with cooling in air; aging at 750±5°C for 16 hr with cooling in air) compared with the disks forged from square blanks (200x200 mm), since ready-made round blanks are free of the stresses present in square blanks when these have to be rounded prior to their hot upsetting. Orig. art. has: 7 figures, 2 tables.

SUB CODE: 11, 13, 20/ SUB DATE: none/ ORIG REF: 006/ OTH REF: 000

Card 2/2 vmb

KAZARINOV, F.

New equipment for geologists. NTO no.4:21 Ap '59.
(MIRA 12:6)

1. Chlen prezidiuma TSentral'nogo pravleniya nauchno-tekhnicheskogo gornogo obshchestva.
(Geological research)

KAZARINOV, F.F.; SMIRNOV, A.I.

Problems of trade-union organizations of workers employed in geological prospecting as presented by the Third Trade-Union Congress. Sov.geol. 1 no.9:3-12 S '58. (MIRA 12:2)

1. TSentral'nyy Komitet profsoyuza rabochikh geologorazvedochnykh rabot.

(PROSPECTING)

AUTHOR: Kazarinov, F.F.

SOV-132-58-9-18/18

TITLE: New Safety Rules for Geological Prospecting Operations (Novyye yedinyye pravila bezopasnosti pri geologorazvedochnykh rabotakh)

PERIODICAL: Razvedka i okhrana nedr, 1958, Nr 9, pp 60-62 (USSR)

ABSTRACT: The author describes the new safety rules for geological and prospecting operations and stresses the importance of their strict observance by all concerned. New courses must be created for the inspectors of work safety so that these rules can be successfully applied.

ASSOCIATION: TsK Profsoyuza rabochikh geologorazvedochnykh rabot (Central Committee fo the Trade Union of Geological Workers)

1. Geophysical prospecting--Safety measures

Card 1/1

USCOMM-DC-55791

KAZARINOV, F.F.

Improve working conditions. Razved. i okh. nedr 26 no.2: 49-51 Feb. '60. (MIRA 14:6)

1. TSentral'nyy komitet profsoyuza rabochikh geologorazvedochnykh rabot.

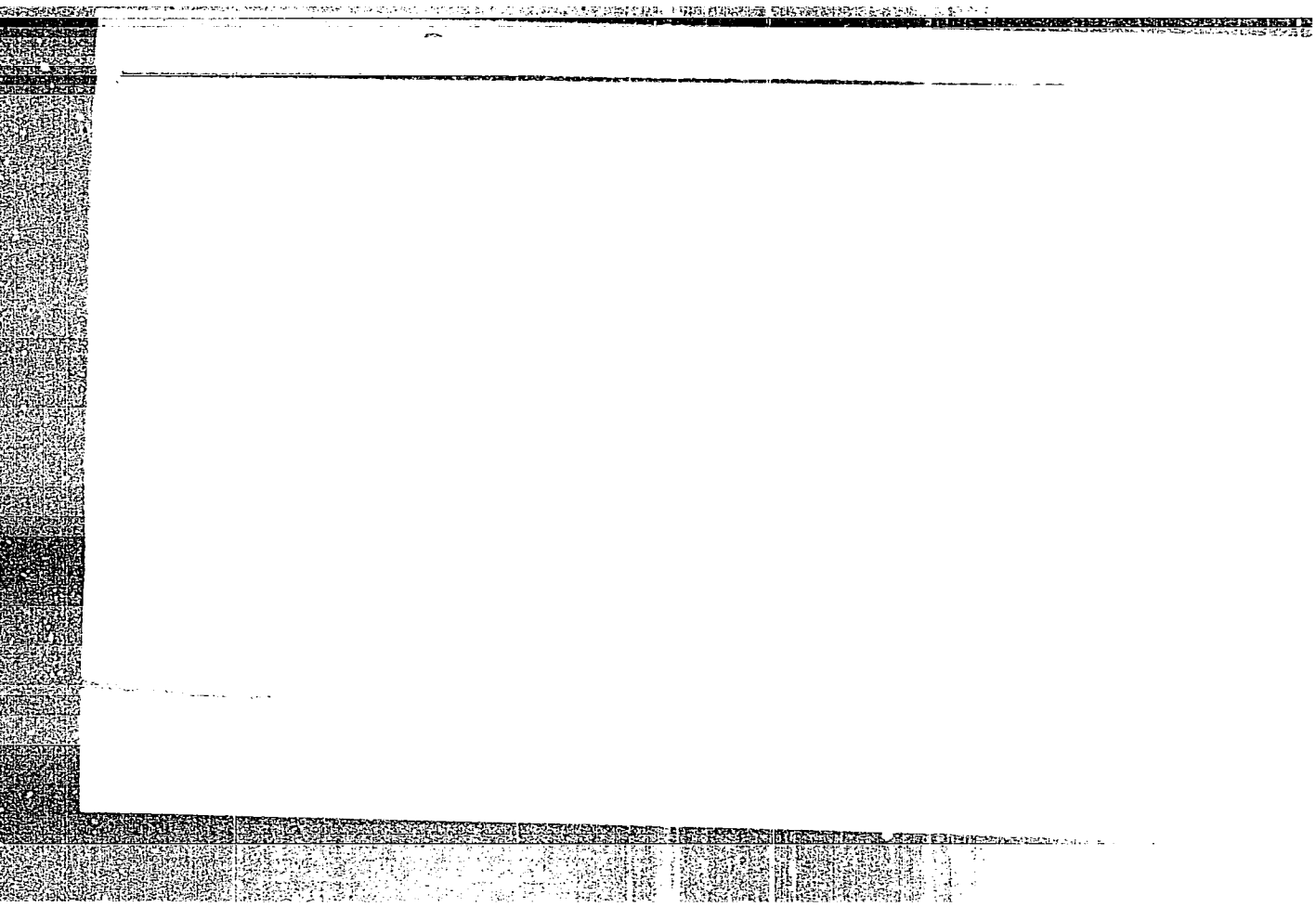
(Prospecting--Safety measures)

KAZARINOV, F.F.

For all-out sanitation and improvement of working conditions. Razved.i okh.nedr 28 no.4:51-54 Ap '62. (MIRA 15:4)

1. TSentral'nyy komitet profsoyuza rabochikh geologorazvedochnykh rabot.

(Prospecting--Safety measures)



APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721320018-7"

KAZANSKIY, I. A.

Selenovye vypriamiteli dlia predpriiatii sviazi [Selenium rectifiers for communications enterprises]. Moskva, Sviaz'izdat, 1952. 252 p.

SO: Monthly List of Russian Accessions, Vol 6 No 4, July 1953

KAZARINOV, Ivan Alekseyevich; KOKOSHKIN, Pavel Aleksandrovich; KULESHOV, V.N., otv.red.; KONDRASHINA, N.M., red.; MARKOCH, K.G., tekhn.red.

[Design of power supply devices for wire-communication enterprises] Proektirovanie elektropitaiushchikh ustanovok predpriiatii provodnoi sviazi. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1960. 399 p. (MIRA 14:3)

(Electric power supply for apparatus)
(Telegraph) (Telephone)

BOVKUN, Viktor Georgiyevich; KAZARINOV, Ivan Alekseyevich; KOKOSHKIN, Pavel Aleksandrovich; LYUBSKIY, Gennadiy Severianovich; MEDOVAR, Anatoliy Isayevich; PETROV, Viktor Vasil'yevich; PIONTKOVSKIY, Bronislav Aleksandrovich; SERYAKOV, Nikolay Ivanovich; ELINSON, Mikhail Mikhaylovich; SERGEYCHUK, K.Ya., red.; GRIGOR'YEV, B.S., red.; FORTUSHENKO, A.D., red.; BUSANKINA, N.G., red.; SHEFER, G.I., tekhn. red.

[Engineering manual on electric communications; electric equipment] Inzhenerno-tekhnicheskii spravochnik po elektrosviazi; elektroustanovki. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1962. 671 p. (MIRA 15:6)
(Telecommunication--Handbooks, manuals, etc.)
(Electric engineering--Handbooks, manuals, etc.)

KAZARINOV, J.

SCIENCE

PERIODICALS: ~~ACTA ZOOLOGICA. Vol. 3, no. 4, 1955~~
MAGYAR FIZIKAL FOLYOIRAT. Vol. 3, no. 4, 1955.

Kazarinov, J. Elastic scattering of protons on 380-Mev energy protons. Tr. from the Russian. p. 427

Monthly list of East European Accessions (EEAI) LC, Vol. 8, No. 2
February 1959, Unclass.

BAZARINOV, K. A. (Eng.); GINTS, Yu. R. (Cand. Tech. Sci.)

"Questions of the Application of Telemechanics in Communications,"

paper read at the Session of the Acad. Sci. USSR, on Scientific Problems of Automatic Production, 15-20 October 1956.
Avtomatika i telemekhanika, No. 2, p. 182-192, 1957.

9015229

GURVICH, S.I.; KAZARINOV, L.N.; MALASHEVSKIY, A.N.

Discovery of titanium-zirconium placers in central Ciscaucasia.
Dokl.AN SSSR 144 no.3:619-621 My '62. (MIRA 15:5)

1. Predstavleno akademikom D.I.Shcherbakovym.
(Ciscaucasia—Geology, Stratigraphic)

GURVICH, S.I.; KAZARINOV, L.N.; KHMARA, N.V.

[Ancient rare-metal-titanium placers, methods of prospecting and evaluating them] Drevnie redkometal'no-titanovye rossypi, metody ikh poiskov i otsenki. Moskva, Nedra, 1964. 169 p. (MIRA 17:12)

KAZARINOV, N.A. [Kazarinov, M.O.]; DZYUBA, N.P.

New method for quantitative determination of khellin in anhydrous solvents. Farmatsev. zhur. 18 no.4:39-43 '63. (MIRA 17:7)

1. Khar'kovskiy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut.

L 1795-66

ACCESSION NR: AP5017529 UR/0243/65/000/007/0057/0060

615.711.5-014.3:543.24

AUTHOR: Kazarinov, N. A.; Dzyuba, N. P.

TITLE: Determination of pharmaceutical preparations containing a carbonyl group by titration with nonaqueous solvents. Report 3. Analysis of cardiac glycosides

AOURCE: Meditsinskaya promyshlennost' SSSR, no. 7, 1965, 57-60

TOPIC TAGS: circulatory drug, quantitative analysis, chemical identification, analytic chemistry

ABSTRACT: Earlier controls of these preparations were conducted with inconvenient biological methods. A quantitative chemical method described in earlier publications was applied to glycosides containing an aldehyde group at C_{10}, in particular to cymarin, erysimin, semisynthetic and natural convallatoxin and Corelborin II (Helleborus glycoside). It consists in reacting the carbonyl group with hydroxylamine HCl, forming the corresponding oxime and binding the liberated HCl with diethylamine whose excess is titrated off with perchloric acid in me-

Card 1/2

L 1795-66

ACCESSION NR: AP5017529

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thanol in the presence of the thymol blue indicator. Chromatographic tests showed that the results agreed with data from biological analysis, but the results obtained by chemical analysis were more reproducible and more exact. The chemical analysis method is therefore recommended for both laboratory work and analysis of standards. The semisynthetic convallatoxin was prepared by V. T. Chernobay. Orig. art. has: 7 formulas and 1 table

55

ASSOCIATION: Khar'kovskiy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut (Kharkov Chemical-Pharmaceutical Scientific Research Institute)

55

SUBMITTED: 25Apr64 ENCL: 00 SUB CODE: LS, GC

NR REF SOV: 013 OTHER: 004

mlb

Card 2/2

KAZARINOV, N.A. [Kazarynov, M.O.]; IZYUBA, N.P.

Relation of the rate of the formation of oximes of cardiac glycosides to their structure. Farmatsev. zhur. 20 no.5:28-31 '65. (MIRA 18:11)

1. Khar'kovskiy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut. Submitted January 26, 1965.

KAZARINOV, N.D.

Scalar diffraction problem for an elliptic cylinder and an ellipsoid of revolution. Dokl.AN SSSR 138 no.4:759-762 Je '61.
(MIRA 14:5)

1. Matematicheskiy institut imeni V.A.Steklova AN SSSR. Predstavleno akademikom A.A.Dorodnitsynym.
(Potential, Theory of) (Boundary value problem)

BING, R.G.; KAZARINOV, N.D. (Madison, Wiskonsin, SShA); KAZHDAN, I.A., (studentka 4-go kursa); MAS'KO, S.S.(studentka 4-go kursa); DORFMAN, A.G. (Gor'kiy); KUZHEL', A.V. (Uman'); SKOPETS, Z.A. (Yaroslavl'); TELESIN, Yu.Z. (Moskva)

Brief notes. Mat.pros. no.6:205-216 '61. (MIRA 15:3)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni Lenina (for Kazhdan, Mas'ko).
(Mathematics--Problems, exercises, etc.)

33238

S/089/62/012/002/010/013
B102/B138

26.2264
21.6000

AUTHORS: Kazarinov, N. M., Matveyev, O. A., Ryvkin, S. M., Solov'yev, S. M., Strokan, N. B., Tarkhin, D. V.

TITLE: Investigation of semiconductor spectrometer counters for measuring fragment energies

PERIODICAL: Atomnaya energiya, v. 12, no. 2, 1962, 153 - 154

TEXT: U^{235} fission fragment energy was measured by semiconductor counters developed at the fiziko-tekhnicheskiy institut im. A. F. Ioffe (Physicotechnical Institute imeni A. F. Ioffe). The surface-barrier junction of these counters was produced by spraying gold onto an n-type silicon plate. These counters, which were studied earlier by the authors (Atomnaya energiya, 11, no. 3, 217, 1961), were found to be well suited for alpha spectrometry (resolution 0.5% for E_α = 5.5 Mev). The volume charge region was about 60 μ for maximum voltage, much greater than the fragment range in silicon. Fragment energy was measured with a 0.5 mm Al target, placed in a thin-walled aluminum vacuum chamber. The target had a vacuum-sprayed layer of UF_4, enriched in U^{235} to 92.8%. Diameter of the

Card 1/3

layer was 1.2 cm, and the total weight was 120 μg. The silicon counter was placed 1.5 cm below the target to avoid being hit by the neutron beam collimated into the chamber. The counter pulses were fed to a preamplifier and thence to a 100-channel analyzer. The fragment energy spectra thus measured differed considerably from those obtained from time-of-flight measurements. This was found to be due to energy losses in the counter surface, which were strongly dependent on the angle of incidence of the fragments. As the fragments lose most of their energy in the first part of their path this effect was much higher for them than for alphas. Special counters of 16 mm^2 area were produced with a thinner layer of gold and the energy spectrum was measured again and compared as before. This time the shape was the same, with a difference of about 7 Mev in absolute values. This is attributed partly to energy losses in the fissile layer, and partly to the energy being carried away by fission neutrons. In the Au layer losses do not exceed 1 Mev. Apart from other advantages the silicon counters yield better results than e. g. ionization chambers. There are 2 figures and 5 references: 1 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: W. Stein.

S/056/62/042/004/015/037
B152/B102

21.1000

AUTHORS: Blinov M. V., Kazarinov N. M., Protopopov A. N.

TITLE: Study of the energy and angular distributions of neutrons emitted in thermal-neutron induced U^{235} fission

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 4, 1962, 1017-1021

TEXT: The authors measured the energy distribution of prompt neutrons emitted by thermal neutrons in U^{235} fission for the angles 0°, 45°, and 90° to the flight direction of fission fragments. The fragments were recorded by a xenon-filled ($p = 1.5$ atm) scintillation counter. An aluminum foil with a thin U^{235} layer (~ 2 mg/cm^2) was attached to this counter. The most probable angle of departure of the fragments was determined by collimators on these layers. Stilbene scintillation detectors for detecting the fission neutrons were placed at a certain distance from the uranium layer at various angles to the flight direction of the fragments. The neutron energy was calculated from the time of flight between the two counters. The time of flight was determined by a

Card 1/3

Study of the energy and angular ...

100-channel time analyzer. The coincidences were taken with ФЭУ-33 (FEU-33) photomultipliers. The half width of the coincidence distribution was $6 \cdot 10^{-10}$ sec for Co^{60} gamma quanta for two pairs of these multipliers. The neutron energy threshold still recorded was about 100 kev. The most important part of this time scale was calibrated on the basis of the flight time of gamma quanta for different paths. The remaining part of the scale was gauged with calibrated pieces of the РК-2 (RK-2) cable. The time resolution in the experiments was $5 \cdot 10^{-9}$ sec. The measurements gave the following ratios as relative neutron emission probability: $N(0^\circ):N(45^\circ):N(90^\circ) = (5.7 + 0.2):(2.9 + 0.1):1$. The energies found in this study are harder for 45° and 90°, and much harder for 0° than those found by V. N. Nefedov (ZhETF, 38, 1657, 1960). The values of the present paper do not agree with the calculations of Yu. A. Vasil'yev et al. (Atomn. energ. 9, 449, 1960). The same was also observed by Vasil'yev for the 14-Mev neutron induced fission of uranium (Yu. A. Vasil'yev et al., ZhETF, 38, 671, 1960). The studies were made with the reactor of the Physicotechnical Institute of the Academy of Sciences USSR. S. M. Solov'yev is thanked for special measurements, A. D. Kolchin, L. I. Radayev, V. V. Pikunov and A. G. Roshchin for technical aid. There are 3 figures.

Card 2/3

43364
S/056/62/043/005/012/058
B102/B104

24.6410

AUTHORS: Blinov, M. V., Kazarinov, N. M., Protopopov, A. N., Shiryayev, B. M.

TITLE: The angular anisotropy of γ-quanta accompanying the U^{235} fission

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 5(11), 1962, 1644-1648

TEXT: The angular anisotropy of γ-quanta emitted in thermal-neutron induced fission of U^{235} was measured under optimum geometry. The γ-quantum detector, a stilbene crystal and an ФЭУ-33 (FEU-33) photomultiplier, was lead-shielded (10 cm) in order to reduce the background effect. The effects of prompt neutrons were eliminated by a multichannel time analyzer (resolution $3\text{-}5\cdot10^{-9}$ sec). In previous measurements made with a gas scintillation counter and a copper collimator the anisotropy was found to be 25-30%. Control measurements showed that this high value can be somewhat reduced if account is taken of the γ-quantum

Card 1/3

The angular anisotropy of ...

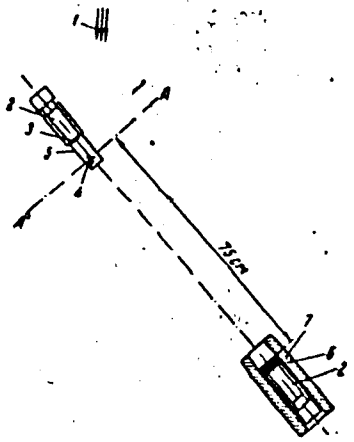
absorption both of the collimator and of the Al backing of the target. In the following experiments these effects were eliminated with the help of a special arrangement (Fig. 1). The fragments were detected by the flashes in a thin scintillation foil. The time distributions of the gamma counts taken at 0 and 90° angles to the chamber axis show a peak with a half-width of $8 \cdot 10^{-9}$ sec. Records gave $19.5 \cdot 10^{6}$ fission events (13,063 quanta) under 0° and $19.8 \cdot 10^{6}$ (12,069 quanta) under 90° to the axis. Thus after all corrections the anisotropy amounts to $\frac{W(0)-W(90)}{W(90)}$ $\approx(12\pm2)\%$, i. e. the γ-emission in the direction of flight of fragments is higher by $(12\pm2)\%$ than perpendicular thereto. Assuming it is the fragment's angular momentum that causes the anisotropy its value can be estimated. For $L \gg 2$, $j \sim 25 - 30$, for $L=3$, $j \sim 15 - 20$. The measurements described have been made at the reactor of the FTI AN SSSR. There are 2 figures.

SUBMITTED: June 18, 1962

Card 2/3

The angular anisotropy of ...

Fig. 1. Apparatus for measuring the γ-ray intensity along the chamber axis. Legend: 1 - neutron beam; 2 - FEU-33, 3 - Terphenyl film, 4-uranium oxide layer (97.9% U^{235}), 5 - vacuum chamber, 6 - stilbene crystal, 7 - lead shield.



Card 3/3

ACCESSION NR: AP4018361 S/0120/64/000/001/0040/0045

AUTHOR: Blinov, M. V.; Kazarinov, N. M.

TITLE: Fission-neutron spectrometer

SOURCE: Pribory* i tekhnika eksperimenta, no. 1, 1964, 40-45

TOPIC TAGS: neutron, fission neutron, spectrometer, fission neutron spectrometer, gas scintillation counter, ionization chamber, neutron spectroscopy

ABSTRACT: A spectrometer for measuring fission neutrons within 200 kev to 7 Mev by the transit-time method is described. Time intervals were measured by converting them into a pulse-height distribution which was recorded by an AI-100-1 multichannel pulse-height analyzer. The time resolution of the instrument, determined from the half-width of γ -γ coincidence of Co^{60}, for 100% efficient recording of γ quanta is 2 nanosec; the resolution for a 10% efficiency is

Card 1/2

ACCESSION NR: AP4018361

0.7 nanosec. The apparatus resolution of the time analyzer is under 10^{-10} sec. A multilayer gas scintillation counter, a semiconductor detector, and an ionization chamber were used to detect fragments. Half-widths of the time distribution of fission gamma-rays obtained with the above detectors were 3, 3-4, and 10 nanosec, respectively. The spectrometer proved to be a highly stable instrument: a time scale drift of only 3 nanosec was noticed after a two-month period of daily operation. "The authors are indebted to A. N. Protopopov for discussing the results of this work, and to A. G. Roshchin for assembling the equipment." Orig. art. has: 9 figures.

ASSOCIATION: none

SUBMITTED: 14Mar63 DATE ACQ: 18Mar64 ENCL: 00

SUB CODE: NS NO REF SOV: 008 OTHER: 003

Card 2/2

L 27896-65

ACCESSION NR: AP4012268

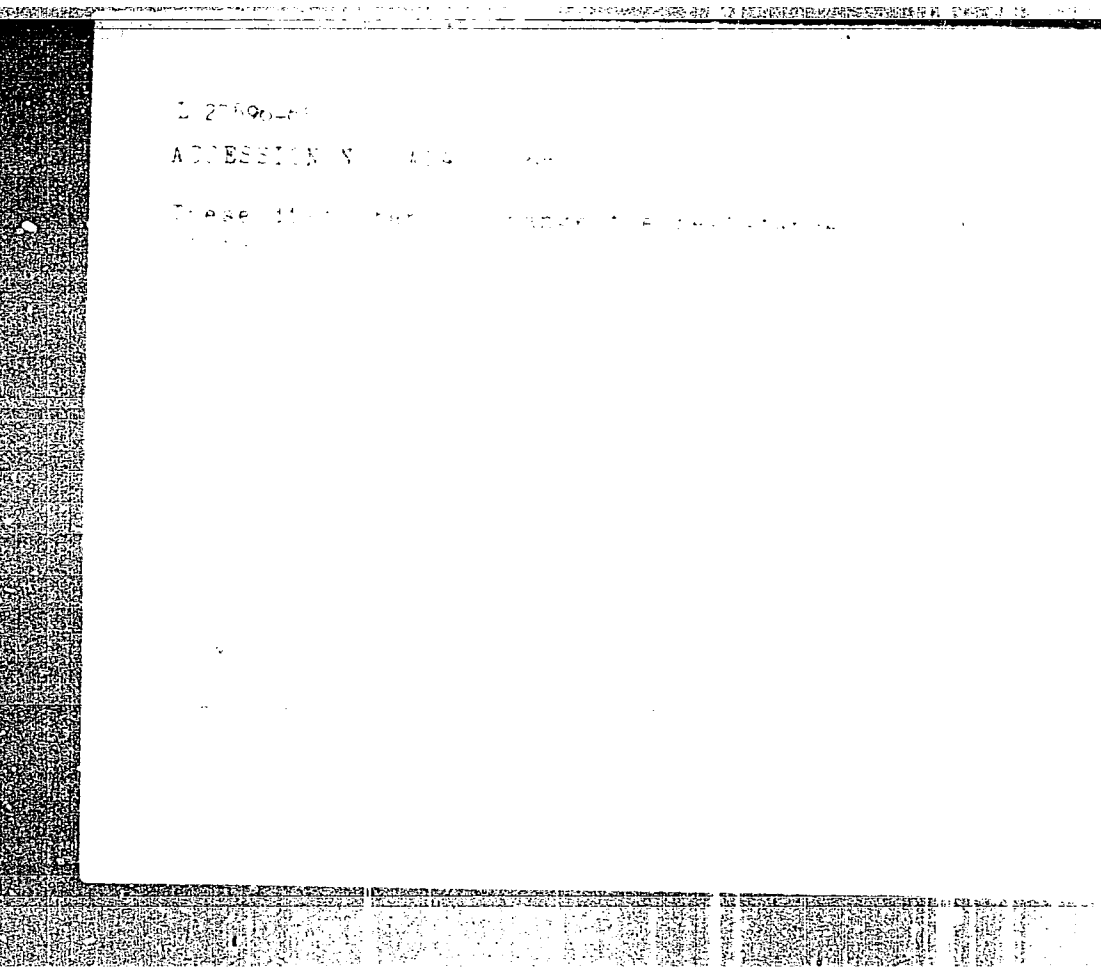
AUTHOR: [illegible]

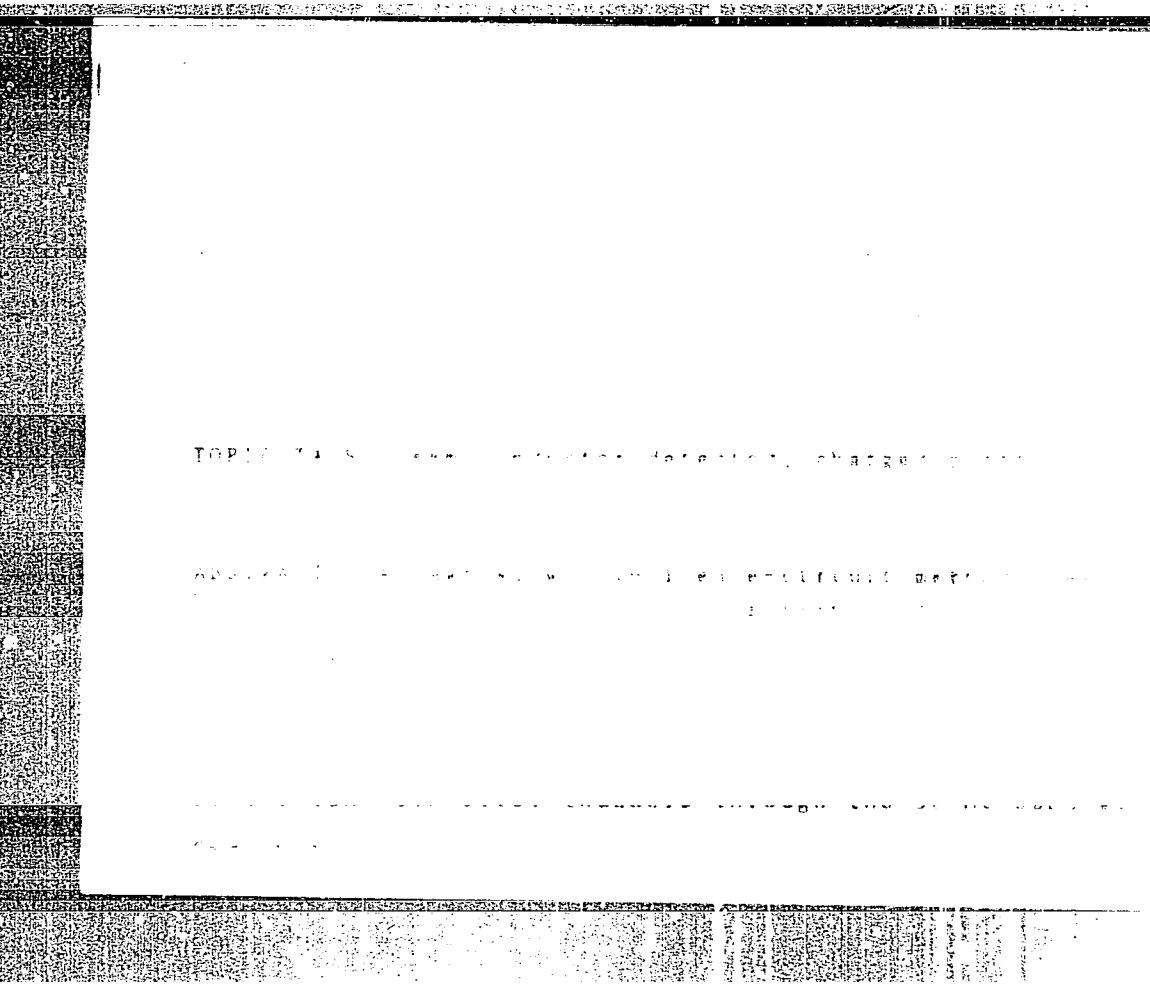
TITLE: Surface-barrier silicon counters in a neutron flux [illegible] fragments

SOURCE: Atomnaya energiya, v. 17, no. 1, 1964, [illegible]

TOPIC TAGS: silicon [illegible], counter irradiation [illegible] barrier [illegible]

ABSTRACT: The authors investigated the changes in [illegible]





pulses corresponding to the γ-quanta were supplied from
photomultiplier to the time converter through

SUBMITTED: 21Nov63 ATI PRESS:

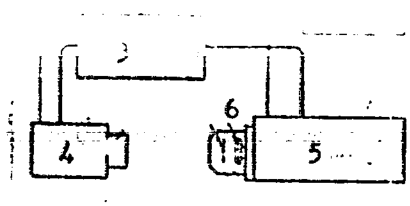


Fig. 1 Block diagram of the [illegible]ast-slow coincidence-circuit system

D and D[illegible] - Amplitude discriminat[illegible]; [illegible] coincidence circuit; [illegible] [illegible] amplitude analyzer; [illegible] [illegible] type [illegible] amplifier; [illegible] amplifier; [illegible] - [illegible] detect[illegible]

Card [illegible]

ACCESSION NR: AP4025950 S/0056/64/046/003/1139/1141

AUTHORS: Blinov, M. V.; Kazarinov, N. M.; Protopopov, A. N.

TITLE: Angular and energy characteristics of emission of U-235 fission neutrons

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 46, no. 3, 1964, 1139-1141

TOPIC TAGS: uranium 235, uranium fission, fission neutron, emission spectrum, energy distribution, angular distribution, cascade evaporation theory

ABSTRACT: In contrast to earlier work by the authors (ZhETF v. 42, 1017, 1962) and by V. N. Nefedov (ZhETF v. 38, 1657, 1960), the present study is devoted to an experimental determination of the c.m.s. energy spectrum of the neutrons from thermal neutron fission of U^{235}. This emission spectrum is then used to calculate the energy and angu-

Card 1/2

ACCESSION NR: AP4025950

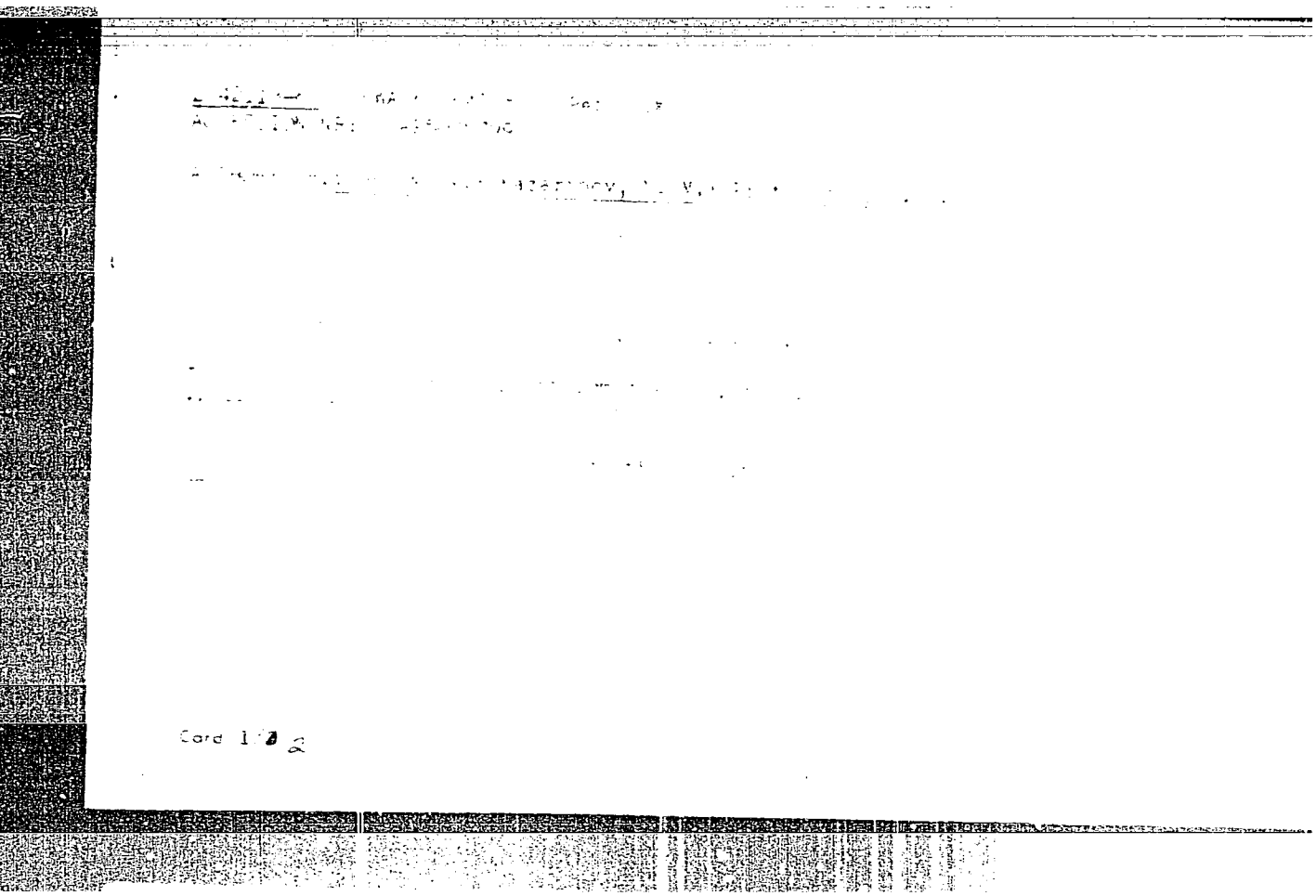
lar distributions in the laboratory system. The results of these calculations are compared with experimental distributions, which are measured in more detail than before. Certain discrepancies between the experimental and calculated data are discussed, but in spite of the discrepancies it is concluded that the overwhelming majority of the neutrons (~90%) emitted following thermal-neutron fission of U^{235} are emitted in an ordinary cascade evaporation process from fully accelerated fragment nuclei. The conclusions are drawn from the fact that the experimental neutron-emission spectrum agrees with calculations based on the neutron cascade evaporation theory (K. J. LeCouteur and D. W. Lang, Nuclear Physics, v. 13, 32, 1959). A detailed report will be published in "Atomnaya energiya." Orig. art. has: 1 figure.

ASSOCIATION: None

SUBMITTED: 13Aug63 DATE ACQ: 16Apr64 ENCL: 00

SUB CODE: PH, NS NR REF SOV: 002 OTHER: 001

Card 2/2



Card 1 of 2

Card 2/3

24.7700 (1035, 1043, 1469)

S/056/61/040/003/025/031
B108/B209

AUTHORS: Kazarinov, R. F., Konstantinov, O. V.

TITLE: Dispersion theory of high-frequency exciton conductivity in a crystal

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 3, 1961, 936-942

TEXT: The authors employ the graph technique suggested in Ref. 5 (O. V. Konstantinov, V. I. Perel'. ZhETF, 39, 197, 1960) for the calculation of high-frequency conductivity. They discuss direct transitions (without phonons) in which the energy maximum of the valency band and the minimum of the conduction band do not coincide in the momentum space. K_i are the threshold points for direct transition at the cutoff frequency ω_0. The excitons forming at these points on transition are equivalent, and their spectra coincide when the wave vector of light is neglected. These excitons are also formed when electrons of the mean velocity

Card 1/2 8

Dispersion theory of ...

$\vec{v}_i = \partial \varepsilon_{\vec{p}}/\partial \vec{p}\,|_{\vec{p}=\vec{K}_i}$ absorb light with the Doppler frequency shift $\Delta\omega_i = \vec{k}\vec{v}_i$, where $\vec{k}$ denotes the wave vector of light. The problem of high-frequency conductivity is solved for the simple model of an electron gas in an alternating field that secures electron-electron interaction at energies that are much less than the width of the forbidden band. The Hamiltonian H of such a system is given by

$$H = H_0 + U; \quad H_0 = \sum_{jp} \varepsilon_{jp} a^+_{jp} a_{jp}, \quad U = \sum U^{j_1 p_1, \, j_2 p_2}_{j_1' p_1', \, j_2' p_2'} a^+_{j_1' p_1'} a^+_{j_2' p_2'} a_{j_2 p_2} a_{j_1 p_1}. \quad (1)$$

$$U^{j_1 p_1, \, j_2 p_2}_{j_1' p_1', \, j_2' p_2'} = \sum_{\nu, n, m} \frac{4\pi e^2}{e\gamma^2 V} \delta_{\nu + p_1, \, p_1' + b_n} \delta_{\nu + p_2, p_2' + b_m} \Gamma_{j_1 j_1'}(p_1, p_3, \gamma) \Gamma_{j_2 j_2'}(p_2, p_4, -\gamma), \quad (1),$$

$$\Gamma_{j_1 j_1'}(p_1, p_3, \gamma) = \int_{V_0} e^{i\gamma x} \psi^*_{j_1' p_1'}(x) \psi_{j_1 p_1}(x) \, dx.$$

where $a^+_{j\vec{p}}$ and $a_{j\vec{p}}$ are the production and annihilation operators of an electron in a state with the band j and the quasi-momentum $\vec{p}$, which are described by the Bloch wave function $\psi_{j\vec{p}}(\vec{x})$; $\varepsilon_{j\vec{p}}$ denotes the energy of

Card 2/9 8

this state, V the normalized volume, V_0 the volume of a lattice cell, and $\vec{b}_m$ and $\vec{b}_n$ are multiples of the vector of the reciprocal lattice; the dielectric constant ε is assumed to be a scalar. With formula (4a) from Ref. 5, the authors found the correction to the density matrix $f_{j\vec{p},j'\vec{p}'}$ to be proportional to the strength of the electric field applied $E_\mu(\vec{x},t) = E_\mu(\vec{\varkappa}, s)\exp(i\vec{\varkappa}\vec{x} + st)$, where $s = -i\omega + \nu$; $\vec{\varkappa}$ and ω denoting wave vector and frequency of light, ν an adiabatic parameter:

$$f_{lp,l'p'}(t) = E_\mu(x,s)\,e^{st}\sum_{lk,l'k'} G^{l'k';l'p'}_{lk,lp}(s,\beta)\int e^{ikx}\,j_\mu(x)_{lk,l'k'}dx; \qquad (2a)\quad (2a)$$

$$G^{l'k';l'p'}_{lk,lp}(s,\beta) =$$

$$= Z^{-1}\int_{-\infty}^{0} e^{s\tau}d\tau\int_0^\beta d\lambda\,\mathrm{Sp}\left\{e^{-\beta H}\exp\left[\frac{H(\tau+i\hbar\lambda)}{i\hbar}\right]a^+_{lp}a_{l'p'}\exp\left[-\frac{H(\tau+i\hbar\lambda)}{i\hbar}\right]a^+_{lk}a_{l'k'}\right\},$$

$$(j_\mu(x))_{lk,l'k'} = (e/2m)\left[\psi^*_{lk}(x)\,\hat{P}_\mu\psi_{l'k'}(x) - \psi_{l'k'}(x)\,\hat{P}_\mu\psi^*_{lk}(x)\right], \qquad (2b)\quad (2c).$$

Card 3/9 8

Dispersion theory of ...

$Z = Sp.e^{-\beta H}$, $\beta = T^{-1}$, T is the absolute temperature in energy units. The quantities $G^{i'\vec{k}',j'\vec{p}'}_{ik,j\vec{p}}(s,\beta)$ are determined by the graph method of Ref. 5.

The case under consideration is characterized by one-electron states which are represented by Bloch wave functions. A combination of indices j and $\vec{p}$ corresponds to every line. Fig. 1 shows a peak illustrating electron-electron interaction corresponding to the factor subsequent to Fig. 1. The quasi-momentum of each line does not exceed half the vector of the reciprocal lattice by its absolute amount. Therefore, the quantity $(\vec{b}_n - \vec{b}_m)$ does not exceed the vector of the reciprocal lattice. The lines correspond to the factors $1 - n_{j\vec{p}}$ or $n_{j\vec{p}}$, where $n_{j\vec{p}}$ is the Fermi function. The authors examine the case in which $T \ll T_0$; $n_{j\vec{p}}$ equals unity when j is the index of a completely filled band, and equals zero when j refers to a band that is incompletely filled. The authors then discuss the various perturbation-theoretical approximations. Fig. 2 shows the case of

Card 4/8

zeroth approximation. Since the first-approximation terms have a common factor (Fig. 4b), one may introduce the quantity $F_{\vec{k}\vec{p}}^{\vec{k}'\vec{p}'}(s)$, where

$$G_{kp}^{k'p'}(s, \sigma) = \frac{1}{\sigma} \frac{\delta_{k+p,\, k'+p'}}{\sigma + \varepsilon_{ck} - \varepsilon_{pk'}} F_{kp}^{k'p'}(s). \qquad (5)$$

(5)

and

$$F_{kp}^{k'p'}(s) = \delta_{k'p} [s + i\hbar^{-1}(\varepsilon_{cp'} - \varepsilon_{vp})]^{-1} -$$
$$- (i\hbar)^{-1} \sum_{\gamma} F_{k,\, p+\gamma}^{k',\, p'+\gamma}(s) \frac{4\pi e^2 e^{-1}}{V\gamma^2} \Gamma_{cc}(p+\gamma, p, \gamma) \times$$
$$\times \Gamma_{vv}(p', p'+\gamma, -\gamma) \left[s + \frac{i}{\hbar}(\varepsilon_{cp'} - \varepsilon_{vp})\right]^{-1}. \qquad (6)$$

(6).

With the identity $R(p,k') \equiv F_{\vec{k}'+\vec{\varkappa},\vec{p}}^{\vec{k}',\vec{p}'+\vec{\varkappa}}$ (8), the authors obtain the following final result:

Card 5/9 8

Dispersion theory of ...

$$R(p, k') = \begin{cases} \frac{1}{V}\sum_n \frac{\varphi_n(p-K_1-\lambda)\varphi_n^*(k'-K_1-\lambda)}{s+i(\omega_n+\nu' s)}, & p, k' \sim K_1+\lambda, \\ \frac{1}{V}\sum_n \frac{\varphi_n(p-K_i-\lambda)\varphi_n^*(k'-K_i-\lambda)}{s+i(\omega_n+\nu' s)}, & p, k' \sim K_i+\lambda. \quad (13) \end{cases} \qquad (13),$$

where $\hbar\omega_n = E_0 + \frac{1}{2}\mu^{-1}_{\alpha\beta}\hbar^2 q_\alpha q_\beta + \varepsilon_n$; the wave function $\varphi_n(\vec{q})$ of an exciton in the n-th state satisfies the equation

$$\mu^{-1}_{\alpha\beta}\frac{\hbar^2}{2}q_\alpha q_\beta \varphi_n(q) - \sum_\gamma \frac{4\pi e^2 \varepsilon^{-1}}{\gamma^2}\frac{1}{V}\varphi_n(q+\gamma) = \varepsilon_n \varphi_n(q) \qquad (14) \qquad (14).$$

With Fourier transformation, this leads to the Sohrödinger equation for the motion of the exciton. With Eqs. (13), (8), (5), and (2a), the authors obtain the following expression for high-frequency conductivity:

Card 6/9

Dispersion theory of ...

S/056/61/040/003/025/031
B108/B209

$$\sigma_{\nu\mu}(\varkappa, \omega) = E_0^{-1}(2\pi)^{-6} \sum_{n,l} \int dp\, dk' \frac{\varphi_n(p - K_l - \lambda)\, \varphi_n^*(k' - K_l - \lambda)}{s + i(\omega_n + \nu'\varkappa)} j_\mu(k', \varkappa) j_\nu^*(p, \varkappa). \quad (16)$$

For allowed transitions where $j_\mu(\vec{K}_1, 0) \neq 0$, this expression is simplified because for long-range excitons, $\varphi(\vec{p} - \vec{K}_1 - \vec{\lambda})$ is non-vanishing only in the immediate neighborhood of the point $\vec{K}_1 + \vec{\lambda}$ in the $\vec{p}$ space. Neglecting the dependence of $j_\mu(\vec{k}', \vec{\varkappa})$ on $\vec{k}'$, one obtains

$$\chi_{\nu\mu}(\varkappa, \omega) = \frac{e^2}{\Lambda} \sum_n |\widetilde{\varphi}_n(0)|^2 \sum_l \frac{r_{vc}^\nu(K_l)\, r_{cv}^\mu(K_l)}{(\omega - \omega_n - \nu'\varkappa) + i\nu}, \quad (17)$$

$$r_{vc}^\nu(K_l) = \int_{V_0} \psi_{vK_l}^*(r)\, r^\nu\, \psi_{cK_l}(r)\, dr. \quad (17)$$

for high-frequency exciton polarizability. This formula is analogous to

Card 7/9

Dispersion theory of ...

that for a gas. The authors thank L. E. Gurevich and V. I. Perel' for numerous discussions. There are 5 figures and 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc. The two references to English-language publications read as follows: Ref. 1: R. I. Elliott. Phys. Rev., 108, 1383, 1957; Ref. 7: J. J. Hopfield. Phys. Rev., 112, 1555, 1958.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR (Leningrad Institute of Physics and Technology of the Academy of Sciences USSR)

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Рис. 1
Fig. 1

$$\pm (ih)^{-1} \sum_{mn} \frac{4\pi e^2 \varepsilon^{-1}}{V (p_3 - p_1 + b_n)^2} \Gamma_{ll_1} (p_1, p_3, p_2 - p_1 + bn) \times$$
$$\times \Gamma_{l_1 l} (p_2, p_4, p_2 - p_4 - b_m) \delta_{p_1 + p_2 - p_3 - p_4, b_m - b_n}.$$

Card 8/9

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B102/B214

24,7700

AUTHORS: Ipatova, I. P., Kazarinov, R. F.

TITLE: Faraday effect on excitons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 1(7), 1961, 209-210

TEXT: This paper gives a theoretical investigation of the rotation of the plane of polarization in the neighborhood of exciton absorption lines; the angle of this rotation depends on the effective mass and the radius of the exciton. In the neighborhood of the exciton absorption lines (corresponding to the transition into the p state) the rotation of the plane of polarization (Faraday effect) may be expected to be large. In cubic crystals the angle of rotation φ is expressed by the component of the boundary vector $\vec{G}$ lying in the H direction ($\vec{H} \parallel z$): $\varphi = (\pi d/\lambda) G_z/\varepsilon$, where d is the thickness of the sample, ε the dielectric constant without magnetic field, and λ the wavelength of light. $\vec{G}$ is determined by the asymmetric part of the dielectric constant: $G_\gamma = \delta_{\gamma\mu\nu}\varepsilon_{\mu\nu}$. Therefore,

Card 1/4

Faraday effect on excitons

the problem consists in the calculation of $\varepsilon_{\mu\nu}(\vec{H})$. For Mott's excitons only transitions to the s-state are permitted, those to the p-state are forbidden. Since, however, the s-state transitions show no Faraday effect, the less intensive forbidden transitions are considered. For the exciton conductivity one has:

$$\sigma_{\mu\nu} = \sum_{n;m=0,\pm1} T_{\mu\nu}^{nm}/[\gamma - i(\omega - \omega_n - \Omega m)], \quad (3),$$

where ω is the frequency of light, $\Omega = eH/2Mc$, M the reduced mass of the exciton, ω_n the hydrogen-like energy level, γ the width of the exciton line, m the magnetic quantum number, $T_{\nu\mu}^{nm}$ a tensor whose real part is related with the oscillator force of the transition and the imaginary part with the rotation of the plane of polarization:

$$T_{\mu\nu}^{nm} = \frac{1}{E_0}\sum_i \left(\frac{\partial J_\nu^{cv}}{\partial k_\alpha}\right)_{K_i}\left(\frac{\partial J_\mu^{cv}}{\partial k_\beta}\right)_{K_i}\left(\frac{\partial \Psi_{n1m}}{\partial x_\beta}\right)_{x=0}\left(\frac{\partial \Psi_{n1m}^*}{\partial x_\alpha}\right)_{x=0}. \quad (4)$$

E_0 is the minimum frequency of the transition to the ground state, K_i is the point in the momentum space corresponding to this transition, Ψ_{n1m}

Card 2/4

Faraday effect on excitons

the hydrogen-like wave function of the p-state of the exciton, and

$$J_\nu^{ec}(k) = J_\nu^{ec*}(k) = e\int d^3r\, u_{ck}^*(r)\hat{v}_\nu u_{ck}(r)\,,$$

the matrix element of the band-to-band current calculated from Bloch's wave function. With $T_{\mu\nu}^{nm} = T_{\nu\mu}^{n-m}$; $T_{\mu\nu}^{nm} = (T_{\nu'\mu}^{nm})^*$ and the assumption that $|\omega_n - \omega| \gtrsim \nu > \Omega$, one obtains

$$-ie_{\mu\nu}^{\text{ANTH}} = \frac{2\pi}{\omega}(\sigma_{\mu\nu} - \sigma_{\nu\mu}) = -i\frac{4\pi}{\omega}\sum_n \operatorname{Im}(T_{\mu\nu}^{n1})\frac{\Omega}{\gamma^2 + (\omega - \omega_n)^2}. \quad (6)$$

The angle of rotation near the line with n = 2 is given by:

$$\varphi = \frac{\pi}{2}\frac{1}{\varepsilon}\left(\frac{d}{\lambda}\right)\left(\frac{a}{2r_0}\right)^3 \frac{\Omega\omega}{\gamma^2 + (\omega - \omega_n)^2}\beta_{xy}, \quad (7),$$

where $\beta_{xy} \sim 1$. A rough numerical estimate of φ for the yellow exciton series in Cu_2O crystal (ε=10) gives: $\varphi \gtrsim 0.5^\circ$ for H = 10^3 gauss, $|\omega - \omega_n| \sim \gamma \sim 10\Omega$, $r_0 \leq 30a$, and d = 500μ. From the angle of rotation

Card 3/4

Faraday effect on excitons

which is always measurable, one can obtain the radius of the exciton if its reduced mass is known. The authors thank L. E. Gurevich, O. V. Konstantinov, and G. M. Eliashberg for discussions. There are 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR (Leningrad Institute of Physics and Technology of the Academy of Sciences, USSR)

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Card 4/4

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AUTHORS: Kazarinov, R. F., Skobov, V. G.

TITLE: Theory of nonlinear galvanomagnetic phenomena in semiconductors

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 2, 1962, 1047 - 1053

TEXT: The current through a semiconductor in crossed magnetic and electrical fields is studied under both classical and quantum limit conditions. The energy imparted to the electrons on scattering is shown to be greater than they can impart to the lattice. This causes the temperature of the electron gas to rise. In the quantum case, the electron distribution on scattering is Boltzmannian; the effective electron temperature is proportional to the square of the electrical field strength. The transverse current density is proportional to E^2/H^3 in the classical case, and proportional to H^3/E^2 in the quantum limit. This result was obtained

Card 1/2

Theory of nonlinear galvanomagnetic ...

on the assumption that the conduction electron concentration was constant. The dependence of resistivity on the current density j is similar for scattering of electrons from phonons and neutral impurities and from ionized impurities. In the quantum limit resistivity decreases as the cube j. L. E. Gurevich is thanked for having suggested the theme, V. I. Perel' and G. M. Eliashberg for discussion of the work. There are 1 figure and 3 references: 1 Soviet and 2 non-Soviet. The English-language reference reads as follows: E. N. Adams, T. D. Holstein. J. Phys. Chem. Solids, 10, 254, 1959.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR (Leningrad Physicotechnical Institute of the Academy of Sciences USSR)

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B108/B102

AUTHORS: Kazarinov, R. F., Skobov, V. G.

TITLE: Possibility of amplifying ultrasound in semimetals in an electric field

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 3, 1962, 910-912

TEXT: The amplification of ultrasound by conduction electrons in an electric field is discussed. Amplification is explained as follows: When no electric field is present, the electrons will absorb acoustic energy Q_0. This leads to an electron-acoustic current $\vec{J}$ proportional to Q_0. The sonic energy absorbed by the electrons per unit time is therefore $Q = Q_0 + \vec{J}\vec{E}$ (linear approximation with respect to $\vec{E}$). The sound will be amplified by the electrons when $\vec{E}$ is such that $Q < 0$. When one sound quantum is absorbed, the electron velocity will change by the amount $\hbar\kappa/m$ (κ - wave vector of sound, m - effective mass of electron). During the time τ between two collisions the electron is shifted by $\Delta = \hbar\kappa\tau/m$. In

Card 1/2