Study of the mechanism of electrochemical...

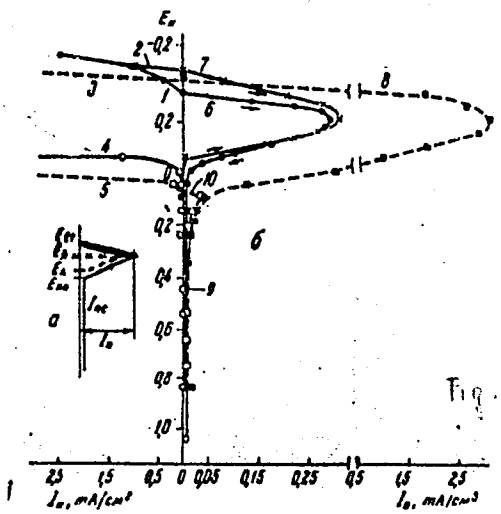

Fig. 1

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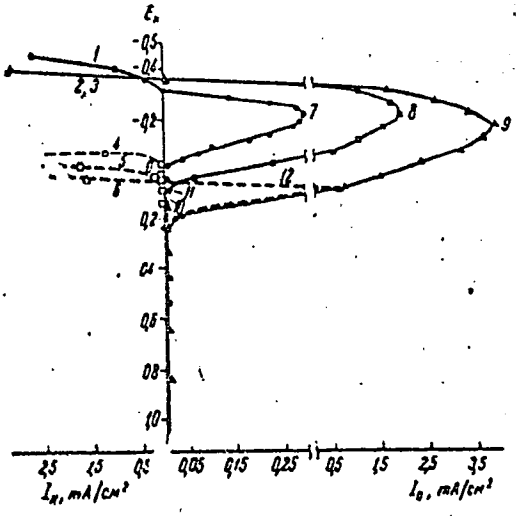
Study of the mechanism of electrochemical...

Fig. 2: Anodic and cathodic polarization of Ti and Ti + 1 % Pt in 40, 60, and 70 % H_2SO_4 at 25°C.

Legend: cathodic curves: 1) Ti in 40 % H_2SO_4; 2) Ti in 60 % H_2SO_4; 3) Ti in 70 % H_2SO_4; 4) Ti + 1 % Pt in 40 % acid; 5) idem in 60 % acid; 6) idem in 70 % acid; anodic curves: 7) Ti in 40 %; 8) Ti in 60 %; 9) Ti in 70 % H_2SO_4; 10) Ti + 1 % Pt in 40 %; 11) idem in 60 %; 12) idem in 70 % H_2SO_4.



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Study of the mechanism of electrochemical...

Fig. 4: Corrosion of Ti and its alloys containing Pt and Pd in H_2SO_4 at 20°C; duration of experiment, 100 hr. Legend: 1) Ti; 2) Ti + 1 % Pt; 3) Ti + 2 % Pt; 4) Ti + 1 % Pd; 5) Ti + 2 % Pd. Corrosion rate in 80 % H_2SO_4 at 20°C; duration of experiment, 164 hr: I) Ti; II) Ti + 1 % Pt; III) Ti + 2 % Pt; IV) Ti + 1 % Pd; V) Ti + 2 % Pd; a) corrosion rate K, $g/m^2 \cdot hr$.

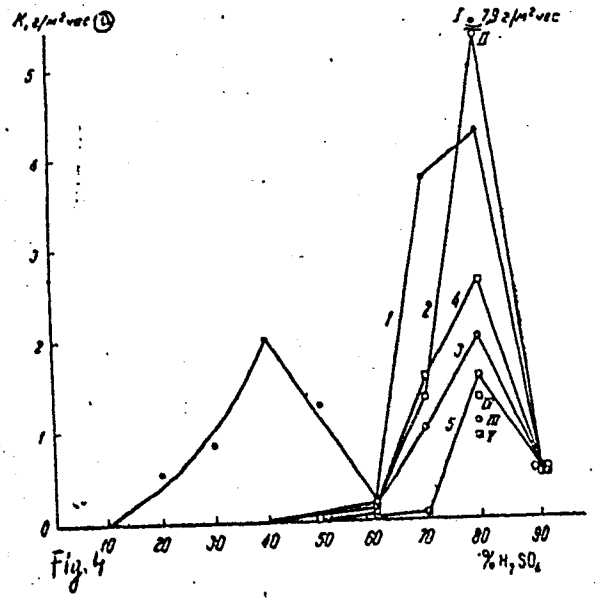

Fig. 4

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S/076/61/035/005/004/008
B101/B218

Study of the mechanism of electrochemical...

Fig. 6: Cathodic and anodic polarization of Ti in 20 % HCl at 25°C.. Legend: 1) cathodic curve for increasing I; 2) idem for decreasing I; 3) anodic curve plotted after previous cathodic polarization; 4) cathodic curve after anodic polarization; 5) anodic curve without previous cathodic polarization.

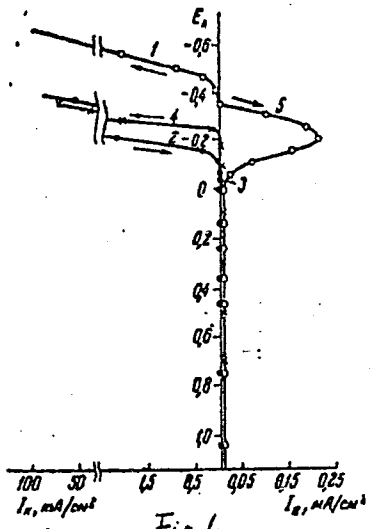

Fig. 6

Card 7/7

ACCESSION NR: AT4043070 S/0000/64/000/000/0156/0166

AUTHOR: Chernova, G. P., Tomashov, N. D., Volkov, L. N.

TITLE: A study of the possible use of anodic protection of stainless steel in isobutene extraction processes

SOURCE: Mezhvuzovskaya konferentsiya po anodnoy zashchite metallov ot korrozii. 1st, Kazan, 1961. Anodnaya zashchita metallov (Anodic protection of metals): doklady* konferentsii. Moscow, Izd-vo Mashinostroyeniye, 1964, 156-166

TOPIC TAGS: stainless steel, steel 1Kh18N9T, isobutene extraction, stainless steel corrosion, anodic corrosion protection, stainless steel passivation, steel corrosion, corrosion temperature, isobutylsulfuric acid

ABSTRACT: Stainless steel 1Kh18N9T, proposed as a reactor material for extracting isobutene from cracking gases, according to a process developed at the VNIINefte Khim, was corrosion-tested at 45C in 65% H_2SO_4 and in isobutylsulfuric acid (a complex ester formed when an alcohol radical displaces an H atom in the H_2SO_4 molecule). The results indicate that this material is unsuitable without anodic anticorrosion protection, its unprotected rate of corrosion depending on agitation (intensively employed in extracting

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ACCESSION NR: AT4043070

isobutente) and amounting to 2 or more mm per year. Hence, the authors studied the anodic behavior of stainless steel in these media, with and without agitation, at 25-65C. The results indicate passivation at a potential range of +0.2 to +1.25V. Current density in the passive state ranged from 5 to 10 ma/cm^2 and was practically independent of solution characteristics, temperature or agitation. The rate of corrosion in these media was 0.08 mm/year at 25C and +0.3 to +1.2v. In this potential range for hardened and tempered samples, there was no tendency to intercrystalline corrosion. Orig. art. has: 10 graphs and 1 table.

ASSOCIATION: None

SUBMITTED: 13Mar64 ENCL: 00

SUB CODE: FP, MM NO REF SOV: 010 OTHER: 008

2/2
Card

KAZARINOV, V.Ye., kand.khim.nauk; CHERNOVA, G.P., kand.khim.nauk

Symposium on Electrochemical Corrosion and Passivity. Vest. AN SSSR 34 no. 2:102 F '64. (MIRA 17:5)

TOMASHEV, Nikon Danilovich; CHERNOVA, Galina Prokof'yevna; YEGOROV, N.G., red.

[Passivity and the protection of metals against corrosion] Passivnost' i zashchita metallov ot korrozii. Moskva, Nauka, 1965. 207 p. (MIRA 18:8)

L 28396-66 EWT(m)/EWA(d)/EWP(t) IJP(c) JD/HW/JG/WB/GD

ACC NR: AT6013783 (N) SOURCE CODE: UR/0000/65/000/000/0007/0013

AUTHOR: Chernova, G. P. (Candidate of chemical sciences); Tomashov, N. D. (Doctor of chemical sciences, Professor)

ORG: none

TITLE: Effect of alloy elements on the anodic dissolution and passivation of stainless steels

SOURCE: Korroziya metallov i splavov (Corrosion of metals and alloys), no. 2, Moscow, Izd-vo Metallurgiya, 1965, 7-13

TOPIC TAGS: chromium steel, stainless steel, corrosion, electrochemistry, nickel, molybdenum, rhenium, passivator additive/Kh25 chromium steel

ABSTRACT: The article deals with a systematic investigation of the effect of the treatment of chromium steel with 0.5, 1, 2 and 3% wt. Ni, Mo and Re on its corrosion and electrochemical behavior in a 1N solution of H_2SO_4 at 25, 50 and 75°C. It is shown that in the presence of as little as 0.5% of an alloy element the corrosion rate of the steel decreases sharply, particularly when Re is used as the alloy element. Increasing the proportion of the alloy element to 3%, however, does not markedly further reduce the corrosion rate. The alloy elements (Ni, Mo, Re) greatly increase the proneness of steel to passivation: they reduce the passivation current by a factor of 6-12; at 75°C the passivation potential gets displaced by ~0.1 v in the positive direction and the anode current in the passive region decreases 1.5-3 times. The effect of the alloy elements on the rate of anodic dissolution indicates

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that Ni and Mo inhibit the process of anodic dissolution but exert virtually no effect on the cathodic process of hydrogen depolarization. By contrast, Re augments the rate of anodic dissolution but very greatly facilitates the cathodic process, reducing the hydrogen overvoltage. Thus, Kh25 chromium steel treated with Re, when its potential is displaced in the negative direction, displays a higher rate of dissolution than Re-free Kh25 steel in the presence of the same current potentials (Fig. 1).

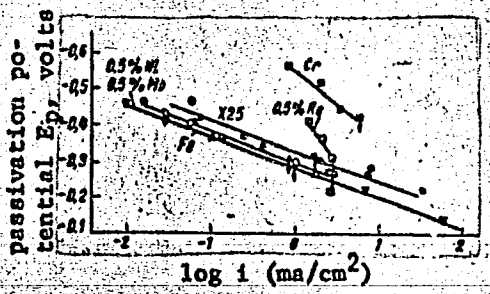

Fig. 1. Anode curves (region of active dissolution) for Kh25 chromium steel and for steels with 0.5% Ni, 0.5% Mo and 0.5% Re, as well as for pure Fe and Cr in 1N H_2SO_4 solution at 25°C:

↓- dissolution rates in the presence of stationary potentials (without polarization)

This gives reason to believe that Ni and Mo increase the passivity of the alloy by inhibiting the anodic process of dissolution while Re enhances the effectiveness of the cathodic process and facilitates passivation by displacing the alloy's potential in a more positive direction than that of the passivation potential. Thus, Re is a cathodic additive, analogous to Pd or Pt. This elucidation of the effect of alloy elements on the kinetics of electrochemical processes warrants the conclusion that it is possible to develop alloys with a higher corrosion resistance by additionally treating the ternary alloys Fe-Cr-Ni or Fe-Cr-Mo with effective cathodic additives -- Re, Pd or Pt. Orig. art. has 7 figures and 1 table.

SUB CODE: 07,11,13/ SUBM DATE: 19Jul65/ ORIG REF: 004/ OTH REF: 005

L 39982-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG/WB

ACC NR: AP6021072 (N) SOURCE CODE: UR/0365/66/002/002/0122/0126

50
B

AUTHOR: Chernova, G. P.; Volkov, L. N.; Tomashov, N. D.

ORG: Institute of Physical Chemistry, Academy of Sciences SSSR (Institut fizicheskoy khimii Akademii nauk SSSR)

TITLE: Study of rhenium and copper buildup on stainless steel surfaces during the process of active dissolution

SOURCE: Zashchita metallov, v. 2, no. 2, 1966, 122-126

TOPIC TAGS: stainless steel, cathode polarization, rhenium, copper, alloying, surface condition, platinum, electrochemistry / Kh25 steel

ABSTRACT: The effects of Cu and Re buildup on stainless steel surfaces was studied during passivation in 1N H_2SO_4 at 25°C. Charging curves are shown in which the potential is given as a function of time for a current density of 300 ma/cm^2. The amount of electricity needed to passivate the steel (Q) was proportional to the passivation time and depended on the preliminary treatment of the surface by cathodic or anodic polarization and varying self dissolution time. After preliminary cathodic polarization, Kh25 steel and Kh25 steel + 0.5% Re had similar anodic charging curves (passivation time τ=70 msec) indicating similar passivation processes. However, after 20 min of self dissolution in 1N H_2SO_4, Kh25 steel had an increased value of τ=140 msec,

UDC: 620.196

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L 39982-66

ACC NR: AP6021072

while Kh25 steel + 0.5% Re had two new potential levels with the final level stopping at 140 msec. For Kh25 steel, the increase in dissolution time from 0 to 40 min resulted in an increase in Q from 23 to 65 mcoul/cm^2. In the Re alloyed steel, Q decreased from 23 to 5 mcoul/cm^2 at the first potential level and increased for the two new levels; at a self dissolution time of 40 min this steel was self passivated. Anodic passivation was performed on pure Re, Kh25 steel plated with Re, pure Cu and Kh25 + + 2.56% Cu steel. For pure Re, the potential remained constant at +1.2 v, corresponding to the solution of Re and the formation of ReO_4. By comparing these tests with similar tests on palladium (which readily adsorbs hydrogen during cathodic polarization) it was established that the second step in the anodic curves for Kh25 + 0.5% Re was due to the ionization of adsorbed hydrogen. The electrochemical reactions were $Re + 4H_2O = ReO_4 + 8_H+ + 7e$ for a solution of Re and $Cu=Cu^{++} + 2e$ for Cu. Calculations were made for the theoretical estimate of the Re and Cu concentrations at the steel surface based on the potential levels. Good agreement was obtained for the dependence between the time of preliminary anodic solution in the active state and the quantity of Re or Cu accumulated on the surfaces of the steel. Orig. art. has: 5 figures, 1 table, 2 formulas.

SUB CODE: 07,11/ SUBM DATE: 15May65/ ORIG REF: 007/ OTH REF: 007

Card 2/2 11b

(N)

ACC NR: AM5027753 Monograph UR/

Tomashov, Nikon Danilovich; Chernova, Galina Prokof'yevna

Passivity and the protection of metals from corrosion (Passivnost' i zashchita metallov ot korrozii) Moscow, Izd-vo "Nauka", 1965, 207 p. illus., biblio. (At head of title: Akademiya nauk SSSR. Institut fizicheskoy khimii) Errata slip inserted. 6000 copies printed.

TOPIC TAGS: corrosion, corrosion protection, passivation, metal passivation, passivator, anodic protection, cathodic protection

PURPOSE AND COVERAGE: This monograph is intended for scientists, engineers and technicians concerned with corrosion protection and problem of metal and alloy passivation. The authors summarize their investigations of metal and alloy passivation and review the most recent published data on this problem. The modern theory of metal passivation, the kinetics of the passivation process, the structure of passive layers, and the methods of passivation investigation are discussed.

TABLE OF CONTENTS [Abridged]

Card 1/2 UDC: 620.197

ACC NR: AM5027753

SUB CODE: 11/ SUBM DATE: 14Jul65/ ORIG REF: 012/ OTH REF: 122/

Card 2/2

CHERNOVA, I.A.; BET'KOVA, M.A.

Therapeutic use of antibiotics in typhoid bacilli carriers.
Sov.med.18 no.3:40-41 Mr '54. (MLRA 7:2)

1. Iz poliklinicheskogo otdeleniya (zaveduyushchiy O.P.Matveyev) Instituta infektsionnykh bolezney Akademii meditsinskikh nauk SSSR i kliniko-diagnosticheskoy laboratorii (zaveduyushchiy A.M.Mar'yasheva). (Antibiotics) (Typhoid fever)

CHERNOVA, I.A.,; SHCHERBAK, N.G.,; pri uchastii vrachey A.A. Vazulia, I.A. Sturman i L.Ya. Andryushchenko.

Role of enteric infection centers in the detection of dysentery. Zhur. mikrobiol., epid. i immun. 27 no.1:65-69 Ja '56 (MLRA 9:5)

1. Iz poliklinicheskogo otdeleniya (zav.-dotsent O.P. Matveyev) Instituta infektsionnykh bolezney AMN SSSR.
(DYSENTERY, BACILLARY, prevention and control, detection at centers for enteric infect. in Russia)

CHERNOVA, I. A. Cand Med Sci -- (diss) "Role of consulting offices for intestinal infections in the control of dysentery (According to data of consulting offices for intestinal infections of adults at city polyclinics)." Mos, 1959. 18 pp (Acad Med Sci USSR), 230 copies (KL, 43-59, 128)

Chernova, I. A., Borisenko, N. G., Danileychenko, I. A., Kirichinshaya, I. A., Chapurskaya-Bazhenova, N. A., Yanchenko, T. F., Golub, N. F., and Chudnaya, L. M.

Detection of abortive and latent forms of poliomyelitis and of the "healthy" virus carriers in the closest environment of the patient.

Materialy nauchnykh konferentsii, Kiev, 1959. 288pp
(Kieskiy Nauchno-issledovatel'skiy Institut Epidemiologii i Mikrobiologii)

CHERNOVA, I.A.

Vascular apparatus of the heart following exclusion of sympathetic innervation. Biul. MOIP. Otd. biol. 65 no.5:132 S-O '60.
(MIRA 13:12)

(HEART—BLOOD VESSELS)
(NERVOUS SYSTEM, SYMPATHETIC)

CHERNOVA, I.A.; kand.med.nauk; BORISENKO, N.G.

The convalescent following epidemic hepatitis as a source of infection. Sov.med. 25 no.5:132-134 My '62. (MIRA 15:8)

1. Iz Instituta infektsionnykh bolezney Akademii meditsinskikh nauk SSSR, Kiyev.

(HEPATITIS, INFECTIOUS)

CHAPURSKAYA, N.A.; BORISENKO, N.G.; CHERNOVA, I.A.; CHERNIY, F.A.; BELOUS, G.V.

Results of dispensary service for convalescents following infectious hepatitis. Nauch. inform. Otd. nauch. med. inform. AMN SSSR no.1:28 '61 (MIRA 16:11)

1. Institut infektsionnykh bolezney (direktor - chlen korrespondent AMN SSSR prof. I.L.Bogdanov) AMN SSSR, Kiyev.

*

SOKOLOVSKAYA, A.P.; CHERNOVA, I.A.; LIBOVA, E.Ye.

Epidemiology and clinical aspects of aborted and anicteric forms of infectious hepatitis. Nauch. inform. Itd. nauch. med. inform AMN SSSR no.1:28-29 '61 (MIRA 16:11)

1. Institut infektsionnykh bolezney (direktor - chlen - korrespondent AMN SSSR prof. I.L.Bogdanov) AMN SSSR, Kiyev.

*

ORLOVA, I.N.; CHERNOVA, I.A.

Upper Carboniferous of the Volga Valley portion in Saratov Province. Trudy NVNIIGG no.1:75-77 '64.
(MIRA 18:6)

KOLOMIYCHENKO, A.I., prof., Laureat Leninskoy premii, zasl. deyatel' nauki, red .; LUKOVSKIY, L.A., prof., red.; ZARITSKIY, L.A., prof., zasl. deyatel' nauki, red.; PITENKO, N.F., prof., red.; GLADKOV, A.A., prof., red.; KURILIN, I.A., prof., red.; MOSTOVOY, S.I., doktor med. nauk, red.; BARLYAK, R.A., prof., red.; SHPARENKO, B.A., dots., red.; ROZENGAUZ, D.Ye., dots., red.; KHARSHAK, B.M., dots., red.; CHERNOVA, I.A., kand.med. nauk, red.

[Current problems of clinical and experimental otolaryngology] Aktual'nye voprosy kliniko-eksperimental'noi otolaringologii. Kiev, Zdorov'ia, 1964. 350 p. (MIRA 18:2)

1. Nauchno-issledovatel'skiy institut otalaringologii. 2. Otdel profpatologii Nauchno-issledovatel'skogo instituta otolaringologii (for Pitenko).

CHERNOVA I. D.

3558. CHERNOVA I. D. * The histopathology of the skeletal musculature and its apparatus of innervation during the preparalytic stage of experimentally produced poliomyelitis (Russian text) Z.NEVROPAT.PSICHIAT.(Mosk.) 1953, 53/8 (653-657) Illus. 6

Investigations were made on 5 rhesus monkeys sacrificed during the preparalytic stage. Findings included phenomena of excitation, changes in tone in the musculature of the extremities and pleocytosis in the CSF. Infection was produced by intratonsillar or subcutaneous injection, or by means of the food; the period of incubation was 6-11 days. The intercostal musculature, the biceps and the muscles of the calves were examined. The first abnormality consisted in changes in the moter end-plates, which showed granular degeneration and decreased argentophilia; the axis cylinders were varicose, while the sensory spindles showed oedema. The muscle fibres per se showed irregularities in staining occasionally associated with minor necroses.

Brandt - Berlin (XX,5,8)

SO: Excerpta Medica, Section VIII, Vol 7, No 9

Lab. of Comparative Anatomy + Histology of the Nervous System, Inst. Neurology, AMS, USSR.

CHERNOVA, I. D.

Dissertation: "Dynamics of Morphological Changes in Skeletal Muscles and Their Neural Apparatus in Poliomyelitis." Cand Med Sci, Second Moscow Medical Inst imeni I. V. Stalin, 31 May 54. Meditsinskiy Rabotnik, Moscow, 21 May 54.

SO: SUM 284, 26 Nov 1954

CHERNOVA, I. I.

CHERNOVA, I. I.: "A study of the life and production of A. N. Ostrovskiy in the ninth class of intermediate school." Min Education RSFSR. Moscow State Pedagogical Inst imeni V. I. Lenin. Moscow, 1956. (Dissertation for the Degree of Candidate in Pedagogical Sciences).

Source: Knizhnaya letopis' No. 28 1956 Moscow

CHERNOVA, I.D.

Histological changes in the submaxillary salivary gland following transection of the tympanichord. Biul.MOIP. Otd.biol. 65: 143-144 My-Je '60. (MIRA 13:7)
(NERVES, FACIAL) (SALIVARY GLANDS)

KOMISSAROVA, A.N., metodist; BYKOVA, A.F., metodist po pchelovodstvu; GAVRILOVA, V.Ye.; MININA, I.S.; CHERNOVA, I.D., metodist; BLIDMAN, A.O.

Exhibition of special items. Inform.biul.VDNKH no.5:23-31 My '64. (MIRA 18:5)

1. Pavil'on "Kartofel' i ovoshchi" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Komissarova). 2. Glavnyy metodist pavil'ona "Ptitsevodstvo" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Gavrilova). 3. Glavnyy zootekhnik pavil'ona "Krolikovodstvo" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Minina). 4. Pavil'on "Mekhanizatsiya i elektrifikatsiya sel'skogo khozyaystva" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Chernova). 5. Glavnyy metodist i pavil'ona "Khraneniye i pererabotka zerna" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Blidman).

CHERNOVA, I. I.

79-1-35/63

AUTHORS: Gorbacheva, I. N. , Varnakova, L. P. , Kleyner, Ye. M., Chernova, I. I. , Preobrazhenskiy, N. A.

TITLE: The Synthesis of the Racemic Methyl Ether of o,o-Dibenzylmagnolin (Sintez ratsemicheskogo metilovogo efira o,o-dibenzilmagnolina)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol.28,Nr 1, pp.167-169(USSR)

ABSTRACT: The alkaloid magnolin (formula I, R = R' = H) was liberated together with magnolamine (reference 1) from the leaves of the Caucasian magnolia (Magnolia fusata of the family Magnoliaceae), in the year 1938. The structure of magnolin was determined by the oxidation decomposition of its trimethylether (reference 2) (I, R = R' = CH_3). On that occasion 1-keto-6,7-dimethoxy-2-methyltetrahydroisoquinoline and 2-methoxy-5,4'-dicarboxydiphenylether were separated. The position of the free hydroxyl groups was determined by oxidation of the triethylether of the alkaloid. On the basis of these investigations the formula (I, R = R' = H) was suggested for magnolin. The authors for their part realized the synthesis of the dichlorohydrate of 2'-methoxy-5',4''-[bis-(6-methoxy-7-benzyl-

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79-1-35/63

The Synthesis of the Racemic Methyl Ether of o,o-Dibenzylmagnolin

oxy-2-methyl-1,2,3,4-tetrahydro)-isoquinolyl]-dimethyl-diphenyl-ether (II), which can after removal of the benzyl residue be converted to the (±) methylether of magnolin (I, R =H, R'=CH_3). As initial product for the synthesis the author used the dichloroanhydride of 2-methoxy-5,4'-dicarboxymethyl-diphenyl-ether (III) and β-(3-methoxy-4-benzyloxy)-phenylamine (IV), where the diamide (V) is produced in the presence of potash. Under the influence of pentaphosphorus chloride the latter is cowerted to the bisdihydroisoquinoline derivative (VI) which is furthermore subjected to a catalytic hydrogenation and methylation by means of formaldehyde in the presence of formic acid. There are 3 references, all of which are Slavic.

ASSOCIATION: Moscow Institute for Fine Chemical Technology imeni M.V. Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M. V. Lomonosova)

SUBMITTED: November 24, 1956

AVAILABLE: Library of Congress

Card 2/2 1. Chemistry 2. Methyl esters 3. Enzymes

CHERNOVA, I.N.; KURTTS, L.Yu.

Using fluoroplast-4 for medical supplies. Med.prom. 11 no.7:49-51 Jl '57. (MIRA 10:8)

1. Mediko-instrumental'nyy ordena Lenina zavod "Krasnogvardeyets"
(ETHYLENE) (MEDICAL SUPPLIES)

Chernova, I.N.

CHERNOVA, I.N.; IONIS, M.V.; KURTS, L.Yu.

Testing various materials for protecting medical instruments from corrosion. Med.prom. 11 no.11:51-53 N '57. (MIRA:11:1)

1. Mediko-instrumental'nyy ordena Lenina Zavod "Krasnogvardeyets"
(MEDICAL INSTRUMENTS AND APPARATUS)
(CORROSION AND ANTICORROSIVES)

CHERNOVA, I.N.; IONIS, M.V.

Applying two-layer antireflection films to optical instruments with light passages up to 10 millimeters in diameter. Med. prom. 13 no.2:48-51 F '59. (MIRA 12:3)

1. Mediko-instrumental'nyy zavod "Krasnogvardeyets."
(LENSES)

CHERNOVA, I.N.; IGNIS, M.V.

Use of epoxide resins in the manufacture of medical articles.
Med.prom. 13 no.7:52-54 Jl '59. (MIRA 12:10)

1. Mediko-instrumental'nyy zavod "Krasnogvardeyets."
(RESINS, SYNTHETIC)

VASUNIN, K.N., kand. khim. nauk, dotsent; [illegible], [illegible], aspirant

Kinetics of the sorption of vapors and liquids by high polymers. Nauch. trudy MTILP no.27:76-92 '63. (MIRA 17:11)

1. Kafedra fizicheskoy i kolloidnoy khimii Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.

CHERNOVA, I.V.

Results of repeated experiments in phagoprophylaxis of typhoid fever. Zhur. mikrobiol. epid. i immun. no.10:98 O '54. (MLRA 8:1)

1. Iz Ufimskogo instituta vaktsin i syvorotok im. Mechnikova
(TYPHOID FEVER--PREVENTION INOCULATION)

CHERNOVA, I.V.; KOZLOVA, A.A.; SAGITOVA, R.G.; SHELOMENTSOVA, N.I.

Epidemiologic effectiveness of enteroparenteral vaccination against dysentery. Zhur. mikrobiol. epid. i immun. no.11:58-60 N '54. (MLRA 8:1)

1. Iz Ufimskogo instituta vaktsin i syvorotok (dir. U.S.Yenikeyeva, nauchnyy rukovoditel' prof. N.I Mel'nikov)

(DYSENTERY, BACILLARY, prevention and control, vacc., enteroparenteral technic)

USSR/Human and Animal Physiology (Normal and Pathological) T
Blood Circulation. The Heart.

Abs Jour : Ref Zhur Biol., No 6, 1959, 26592

Author : Chernova, I.V.
Inst : -
Title : Electrocardiographic Changes in Various Forms of Rheumatism in Children.

Orig Pub : V. sb.: Materialy Nauchn. konferentsii Chelyab. med. in-ta poscyashch. 40-letiyu Velikoy Okt. sots. revolutsii, Chelyabinsk, 1958, 155-156

Abstract : No abstract.

Card 1/1

CHERNOVA, I.V.

Some disturbances of cardiac rhythm in rheumatic fever in children. Vop.okh.mat. i det. 4 no.4:25-30 Jl-Ag '59. (MIRA 12:12)

1. Iz kafedry detskikh bolezney (zav. - prof. Ye.Ye. Granat) Chelyabinskogo meditsinskogo instituta (dir. - prof. G.D. Obraztsov).
(HEART) (RHEUMATIC FEVER)

CHERNOVA, I.V.

Electrocardiogram as an index of the clinical course of rheumatic fever in children. Vop. okh. mat. i det. 5 no.6:12-14 N-D '60. (MIRA 13:12)

1. Iz kafedry detskikh bolezney (zav. - prof. Ye.Ye.Granat) Chelyabinskogo meditsinskogo instituta (direktor - prof. G.D.Obraztsov).
(ELECTROCARDIOGRAPHY) (RHEUMATIC FEVER)

CHERNOVA, I.V.

Dynamics of electrocardiographic changes in rheumatic fever in children. Vop.okh.mat. i det. 8 no.2:32-35 F'63. (MIRA 16:7)

1. Iz kafedry detskich bolezney (zav. - dotsent N.S.Tyurina) Chelabinskogo meditsinskogo instituta.
(ELECTROCARDIOGRAPHY) (RHEUMATIC HEART DISEASE)

CHERNOVA, I.V.; VASENIN, R.M.

Diffusion of alcohols in polyamide. Vysokom.soed. 6 no.9:1704-1707 S '64. (MIRA 17:10)

1. Moskovskiy tekhnologicheskiy institut legkoy promyshlennosti.

CHERNOVA, K.I., patronazhnaya sestra; SNESAR', M.P., patronazhnaya sestra.

Work experience in the visiting nurses' territory of the district tuberculosis center. Med.sestra no.12:17-19 D '53. (MLRA 6:12)

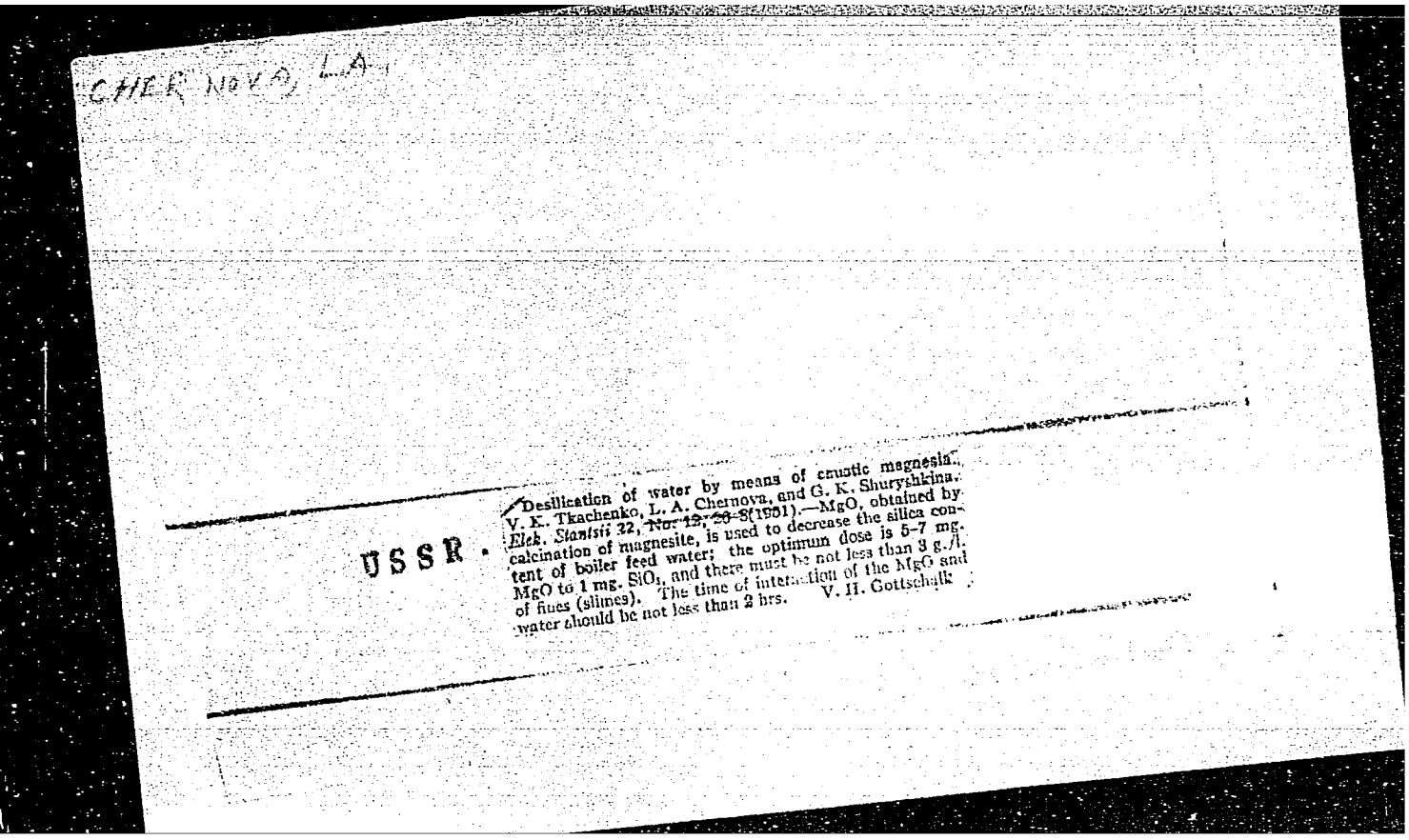
1. Tuberkuleznyy dispanser, Odessa.
(Nurses and nursing) (Tuberculosis)

CHERNOVA, K.I.

Glycogen content in the mucous epithelium of the oral cavity. Stomatologiia no.3:19-20 My-Je '55. (MLRA 8:9)

1. Iz kafedry khirurgicheskoy stomatologii (zav.prof. S.F. Kosykh) Molotovskogo meditsinskogo stomatologicheskogo instituta (dir.dotsent M.V.Kostylev)

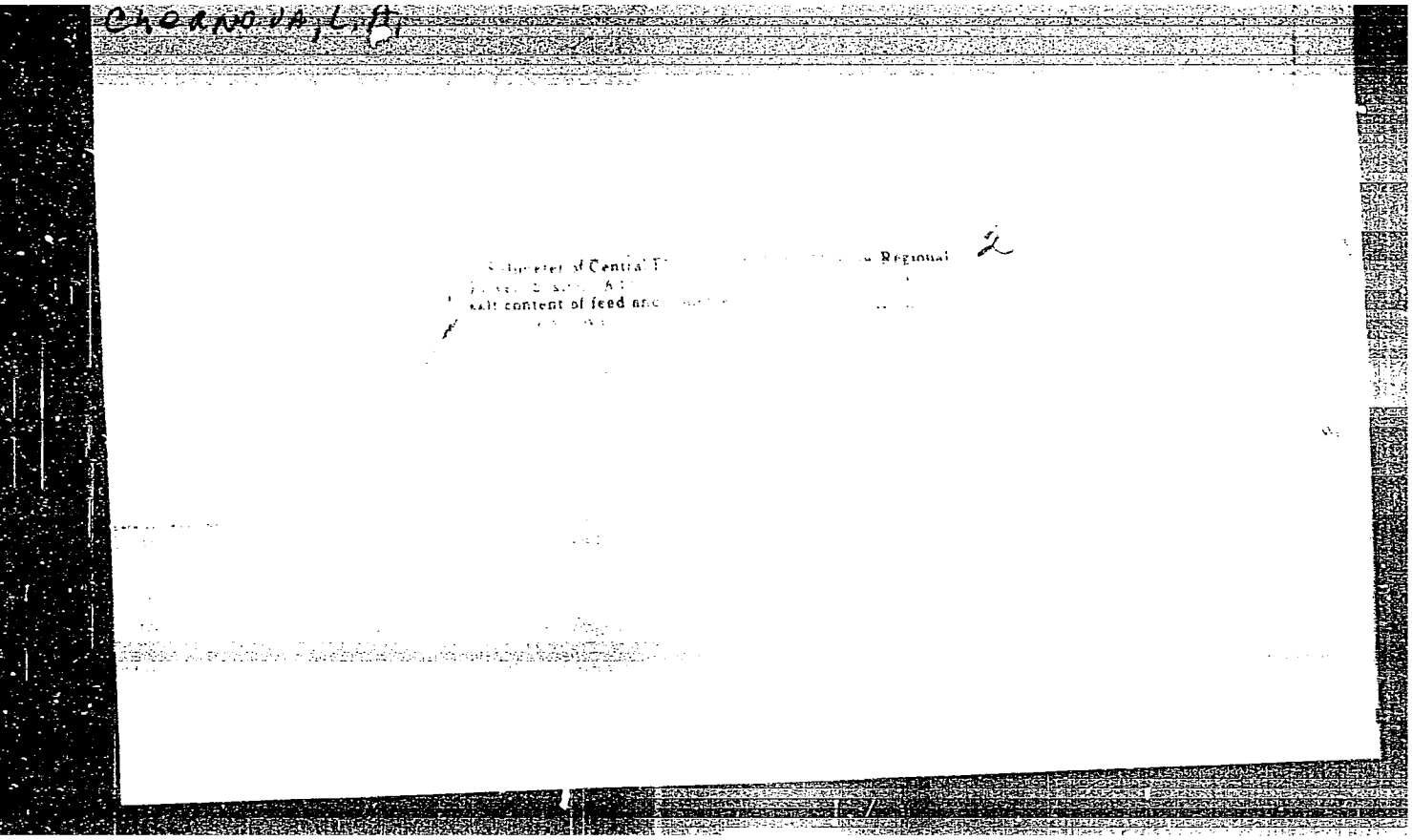
(GLYCOGEN, metabolism,
mouth mucous epithelium)
(EPITHELIUM, metabolism,
glycogen, in oral mucous epithelium)
(MOUTH, metabolism,
glycogen in oral mucous epithelium)



CHERNOVA, L.A.

USSR

Desilication of water by means of caustic magnesia. V. K. Tkachenko, L. A. Chernova, and G. K. Shuryshkina. *Elek. Stantsii* 22, No. 12, 30–5(1951).—MgO, obtained by calcination of magnesite, is used to decrease the silica content of boiler feed water; the optimum dose is 5–7 mg. MgO to 1 mg. SiO_2, and there must be not less than 3 g./l. of fines (slimes). The time of interaction of the MgO and water should be not less than 2 hrs. V. H. Gottschalk



CHERNOVA, L.A.

Remarks on A.A.Kot's, S.A.Konovalov's and I.N.Rozenganz' article "Productivity of saline sections of boilers with staged evaporation." (MLRA 7:11)
Elek.sta. 25 no.10:56 O '54.

1. Nachal'nik Khimsluzhby Mosenergo.
(Steam boilers) (Kot, A.A.) (Konovalov, S.A.)

CHERNOVA, L.A.

Adsorption of [illegible] on the surface of sugar crystals [illegible] and T. A. Gudakova (Technol. Inst. [illegible] Moskov). *Sakharnaya Prom.*, 28, No. 4, 43(1954).—Most of the coloring matter on raw sugar crystals can be removed by affination. The color of the crystal is due to the molasses adhering to the crystal.

V. F. Raikow

CHERNOVA, L.A., inzhener; SHURYSHKINA, G.K., inzhener.

Chemical control of steam quality. Elek. sta. 26 no.1:52-54 Ja '55. (MLRA 8:3)
(Steam)(Electric power plants)

CHERNOVA, L.A.

Operation of desalting water-purification installations of the type developed by the Moscow Regional Power Authority. Teploenergetika 3 no.12:57-58 D '56. (MLRA 9:12)
(Water purification)

CHERNOVA, L.A.

AKOL'ZIN, P.A.; GURVICH, S.M.; KOTLYAR, R.V.; KOT, A.A.; MAMET, A.P.; MIKHAYLENKO, P.S.; PROKHOROV, F.G.; SOKOLOV, I.M.; CHERNOVA, L.A.; SHKROB, M.S.; YANKOVSKIY, K.A.; GUREVICH, L.S.; POLYAKOV, V.V.

To the editors of "Energetik." Energetik 5 no.3:11-12 Mr '57.
(MIRA 10:3)

1. Vsesoyuznyy teplotekhnicheskiy institut im. Dzerzhinskogo (for Akol'zin, Kot, Yankovskiy) 2. TSentral'nyy kotoloturbinnyy institut (for Gurvich, Mamet,) 3. Teplo-elektro-proekt (for Gurevich). 4. Ministerstva elektrostantsiy (for Kotlyar, Prokhorov). 5. Teplovaya elektricheskaya tsentral'naya stantsiya No.9 (for Mikhaylenko, Polyakov) 6. Perevyazochnyy etapnyy punkt (for Sokolov). 7. Moskovskoye rayonnoye upravleniye energokhozyaystva (for Chernova). 8. Energeticheskiy institut Akademii nauk SSSR (for Shkrob).
(Boilers)

CHERNOVA, L.A.

CHERNOVA, L.A., inzhener; GUSHCHINA, M.M., inzhener.

Experience starting and operating salt-removing water purifying apparatus in the Moscow Power Production system. Energetik 5 no.4: 11-14 Ap '57. (MLRA 10:6)

(Feed-water purification)

Chernova, L. A.

DAVILOV, I.A. (g. Kovrov); CHERNOVA, L.A.

On the boiler-water system and chemical control in boilers. Energetik 5 no.4:35-36 Ap '57. (MLRA 10:6)

(Boilers)

SOV/91-58-3-27/28

AUTHOR: Chernova, L.A.

TITLE: On Measures to Prevent Equipment Corrosion (O merakh predotvrashcheniya korrozii oborudovaniya) Answer to the Inquiry of R.A. Mochalova, of the City of Ivanovo (Otvet na zapros R.A. Mochalovoy, g. Ivanovo)

PERIODICAL: Energetik, 1958, Nr 3, pp 39-40 (USSR)

ABSTRACT: The question reads: "How to prevent the corrosion of the equipment used in the chemical water-purifying process, and in the feeding tract of an electric power plant". Basing on the research conducted by the VTI (All-Union Heat Engineering Institute) the author advises to take steps to remove carbonic acid and oxygen as causes of corrosion. For that purpose, the filtered water has to be amminized. The pH factor of the filtered water is raised in this way. The water-amminizing process has to be carried out so that ammonia-water doses keep the rate: 0.8 mg H_3 to 1.0 mg CO_2.

Card 1/2

On Measures to Prevent Equipment Corrosion. Answer to the Inquiry of R.A. Mochalova, of the City of Ivanovo.

Experimental data on amminization can be borrowed from TETs Nr 11, Mosenergo. Other detailed instructions for the same purpose are given. Completely equipped deaerators, combined with steam coolers needed for the same purpose, are being produced in the Barnaul plant.

Card 2/2

CHERNOVA, L.A.

AUTHOR: Chernova, L.A. 91-58-7-20/27

TITLE: On the Use of Sodium Hydroxide in Gas Analyzers (O primenenii yedkogo natriya dlya gazoanalizatorov).

PERIODICAL: Energetik, 1958, Nr 7, p 37 (USSR)

ABSTRACT: The author answers the question of Rul'ko, whether the commonly-used potassium hydroxide can be replaced by sodium hydroxide in Orsat - Fisher gas analyzers for the absorption of CO_2. Observations made by the Sluzhba naladki Mosenergo ("Mosenergo" Adjustment Service) showed that sodium hydroxide cannot be recommended because of its rapid loss of absorption power and its tendency to rapid crystallization.

1. Gas analyzers--Equipment 2. Sodium hydroxide--Absorptive properties--Effectiveness 3. Potassium hydroxide--Applications

Card 1/1

SOV/96-59-2-12/18

AUTHORS: Ostrovskiy, Ya.M., Candidate of Technical Sciences
Chernova, L.A., Engineer
Aseyeva, A.V., Engineer

TITLE: Operating Experience with Demineralising Installations (Opyt ekspluatatsii obessolivayushchikh ustanovok)

PERIODICAL: Teploenergetika, 1959, Nr 2, pp 69-79 (USSR)

ABSTRACT: The first part of the article briefly reviews the water demineralising installations at power stations of the Mosenergo system since the first installation at Heat and Electric Power Station Nr 8 in 1941 up to the present time when there are five such water purification installations working. The schematic diagrams of the different water treatment plants are given in Fig 1 and each is briefly described. Analyses of the various waters that are demineralised are given in Table 1. Operation of the various main plant components is then described in turn, starting with first stage H-cationite filters, performance data on which are given in Table 2. The operation of first stage anionite filters is then described and performance data are given, see also Table 3.

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Operating Experience with Demineralising Installations

The importance of completely removing free carbonic acid from the water is stressed. The operation of highly basic anionite filters is then considered; it will be seen from the data given in Table 4 that the demineralised water contains extremely small amounts of silica and other dissolved substances so that water purified in this way can be used both for super high pressure drum type boilers with injection de-superheating and also for once-through boilers. The operating characteristics of anionite grade AV-16 are given in Table 5, its main defect is low mechanical strength. Changes in water conditions that have been observed when starting to use demineralised water for boiler feed are then discussed; the main information being given in Table 7. It will be seen that the total salt content of the feed water and steam remained practically unchanged but after the introduction of demineralisation the silica content was reduced by a factor of 3 to 4. As a result deposits on turbine blading were much reduced. Economy also resulted from reduced blow-down. The results achieved with a simplified demineralisation

system on boilers type TP-170 are given in Table 9. boiler blow-down was less and the consumption of sodium phosphate was reduced. It is concluded that the use of the full demineralisation system gives feed water that is fully satisfactory for both drum and once-through boilers of high and super-high pressures. Further such installations are being made. The simplified demineralisation circuit in which the absorption of anions of strong acid and of silica is combined in one filter containing the highly basic anionite EDE-10P has little future for the preparation of feed water for high-pressure boilers because desilication and demineralisation is not complete enough and the water is not fit to use for de-superheating injection. When the necessary anionites are being made on a large scale the simplified system may be suitable for preparing water for medium pressure boilers when the raw water is of comparatively high mineral content. In order that more general use may be made of demineralisation it is necessary to extend the regular production of anionites, paying particular attention to improvements in the

Operating Experience with Demineralising Installations

mechanical strength. Better methods of removing organic substances from water to be demineralised are required. Further investigation is required into the reasons why anionites lose exchange capacity in service. Various improvements that are required in demineralisation systems are briefly described. There are 3 figures and 9 tables.

ASSOCIATION: Mosenergo

8(6) SOV/91-59-3-17/22

AUTHOR: Chernova, L.A.

TITLE: The Prevention of Scale Formation in Boilers (Predotvrashcheniye nakipeobrazovaniya v kotlakh)

PERIODICAL: Energetik, 1959, Nr 3, pp 36-37 (USSR)

ABSTRACT: The article is a reply to Mr. N.A. [Kavun], living in Shramkovka village, Cherkasskaya oblast', who asked how to prevent scale formation in boilers. In answering, the author recommends the following measures: 1) the alcalizing of feed water from the pond up to 7 pH by the use of caustic soda; 2) the thorough cleaning of salts from cationic filters after their regeneration; 3) deaeration of feed water leaving no more than 0.05 mg/l of oxygen and 5 mg/l of free carbon dioxide; 4) addition of a softening agent for boiler water by introducing a solution of sodium phosphate into the

Card 1/2

CHERNOVA, L.A., inzh.; ASEYEVA, A.V., inzh.

Experience in boiler conservation at power plants of the Moscow Regional Power System Administration. Teploenergetika 7 no.2:51-54 F '60. (MIRA 13:5)
(Boilers)

CHERNOVA, L.A.

Control of water operating conditions of boilers. Energetik 8 no.1:36 Ja '60. (MIRA 13:5)
(Boilers)

CHERNOVA, L.A.

Regeneration of cation filters used for chemical water purification. Energetika 8 no.3:38 Mr '60. (MIRA 13:6)
(Water—Purification)

CHERNOVA, L.A.

Causes and prevention of the cementation of sulfocarbon grains. Energetik 8 no.9:38 S '60. (MIRA 14:9)
(Sulfocarbons)

CHERNOVA, L.A., inzh.; ASEYEVA, A.V., inzh.

Water supply norms of thermal electric power plants. Teploenergetika 10 no.10:81-82 O'63 (MIRA 17:7)

1. Khimsluzhba Moskovskogo rayonnogo upravleniya energeticheskogo khozyaystva.

CHERNOVA, L.A., inzh.; DYAKINA, R.V., inzh.

Experience in using corrosion preventive coating in the electric power plants of the Moscow Electric Utility System. Teploenergetika 11 no.9:51-54 S '64. (MIRA 18:8)

1. Moskovskoye rayonnoye upravleniye energeticheskogo khozyaystva.

MAN'KINA, N.N., kand. tekhn. nauk; CHERNOVA, L.A., inzh.; RAYEVA, A.G., inzh.

Study of decreased phosphation in TP-84 boilers with condensate feed. Teploenergetika 11 no.10:11-15 O '64. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy teplotekhnicheskiy institut im. F.E. Dzerzhinskogo; Khimsluzhba i Teplovaya elektrotsentral' No.16 Moskovskogo rayonnogo upravleniya energeticheskogo khozyaystva.

CHERNOVA, L.A.

Measures for decreasing the contamination of condensate of industrial enterprises by corrosion products. Energetik 12 no.3:39 Mr '64. (MIRA 17:4)

CHERNOVA, L.A.

Norms on feedwater quality for low-pressure boilers. Energetik. 13 no.9:40 S '65. (MIRA 18:9)

1. Nachal'nik khimicheskoy sluzhby Moskovskogo rayonnogo upravleniya energeticheskogo khozyaystva.

Propagation of centimetric waves ...

electrons is Maxwellian, and that the concentration distribution of electrons over the cross section and electron temperature do not change. The homogeneous longitudinal field, however, is changed by the presence of a high frequency field and the following concentration distribution of electrons takes place in the positive column:

$$\int ndF = I/\sigma_{1n}E'_{con} = I/\sigma_{1n}E_n\sqrt{1 - \frac{1}{2}\frac{\sigma_{1r}}{\sigma_{1n}}\frac{E^2_{hf}}{E^2_{con}}} \quad (5).$$

n is here the electron concentration, I the discharge current, E_{con} the field strength of the constant field, E_{hf} the amplitude of the high-frequency field, σ_{1n} the plasma conductivity in the constant field per electron, σ_{1r} the active component of high-frequency conductivity per electron. A similar expression is given for the increase of the discharge current produced by applying the high-frequency field. From [illegible] that the appli[illegible]

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(622) [illegible]ayev, M. V.,

temperature, but leads to a decrease of the longitudinal constant field and to an increase of the concentration of charged particles. The authors state that in first perturbation-theoretical approximation, the wave propagation constant changes proportional to the electron concentration, when a plasma is introduced into a waveguide. The changes in the phase constant $\Delta\beta^*$ and the damping constant $\Delta\alpha^*$ in the presence of a high-frequency field are determined in first perturbation-theoretical approximation by the relation

$$k = \Delta\alpha^*/\Delta\alpha = \Delta\beta^*/\Delta\beta \quad (7),$$

where $\Delta\alpha^*$ and $\Delta\beta^*$ were determined at a given high-frequency field strength, and $\Delta\alpha$ and $\Delta\beta$ at an infinitely low high-frequency field strength. The experimental determination of the dependence of the phase constant upon field strength was carried out by means of the facilities described in the previous paper (Ref. 1). The results obtained are graphically represented in Figs. 2-5. As may be seen, deviations between theoretical and experimental values for helium are below 15%, and for argon below 30%. The causes for these deviations are said to be

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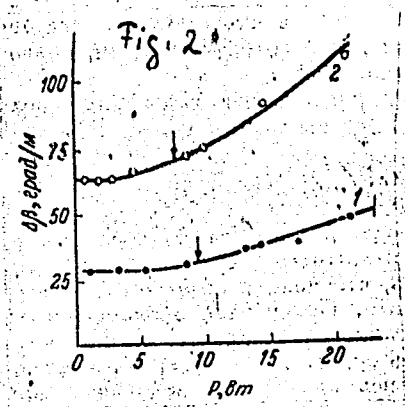
changes in the flux of force, inhomogeneities of the field, inexact determination of field longitudinal components, and of conductivities. Finally, the use of nonlinear effects for the stabilization of the power of super-high frequencies occurring in a waveguide filled with a plasma is discussed. Fig. 9 shows the scheme of such a stabilizer. This scheme represents a power divider made from three-decibel slit-bridges. The superhigh-frequency signal is divided between the input channels, and the ratio of the power-flows in the various output channels is determined from the phase difference between the waves passing through the upper and lower waveguides. If a waveguide contains a gas discharge and phase shifter, a possibility offers itself in that power range in which nonlinear interaction effects of the plasma with the superhigh-frequency field occur, of stabilizing the power flow at the output of the power divider. There are 9 figures and 8 references: 6 Soviet-bloc.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina
(Leningrad Polytechnic Institute imeni M. I. Kalinin)

SUBMITTED: July 13, 1960

Fig. 2



Legend to Fig. 2:
Phase shift as a function of power at 9,200 mc/sec for helium, curve 1 for ma. Curve 2 for 10 ma. Pressure 2 mm Hg.

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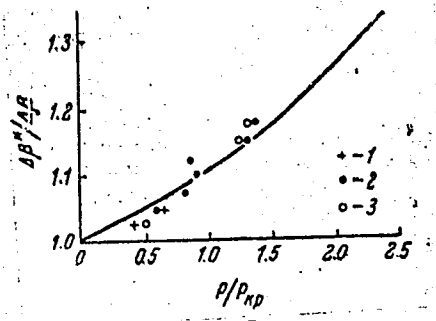
Fig. 3



Legend to Fig. 3:
$\Delta\beta^*/\Delta\beta$ as a function of P/P_{cr}, where P denotes power, and P_{cr} critical power. Curve 1 for 20 ma, curve 2 for 30 ma, and curve 3 for 40 ma. Pressure 0.75 mm Hg argon, 9,200 mc/sec.

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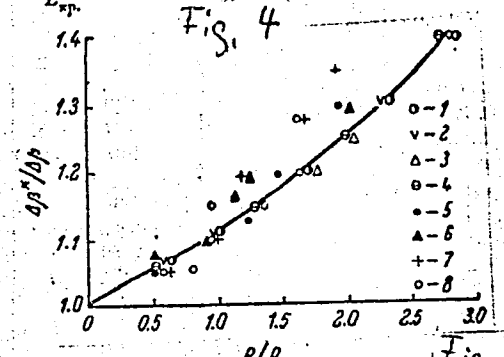
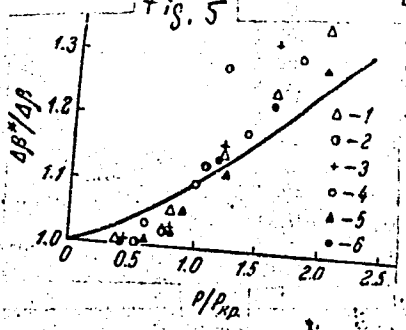
Fig. 4



Legend to Fig. 4: $\Delta\beta^*/\Delta\beta$ as a function of P/P_{cr} for pressures between 0.9 mm Hg and 2 mm Hg helium, and amperages of between 5 and 30 ma.

Fig. 5



Legend to Fig. 5: $\Delta\beta^*/\Delta\beta$ as a function of P/P_{cr} at 3,050 mc/sec and pressures of between 0.3 and 1.8 mm Hg helium, and amperages of between 20 and 40 ma.

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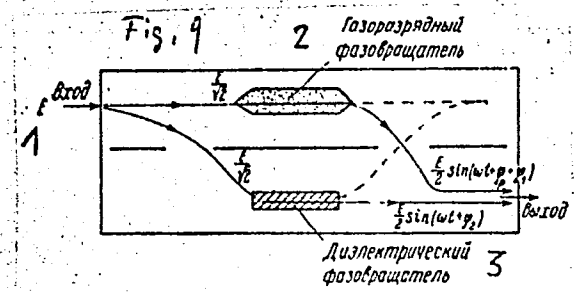
Legend to Fig. 9: Scheme of a power stabilizer: 1) input. 2) gas discharge phase shifter. 3) dielectric phase shifter.

Fig. 9



AZIMOV, S.A.; BANNIK, B.P.; VISHKI, T.; GULYAMOV, U.G.; DO IN SEB; RAKHIMBAYEV, B.G.; CHERNOVA, L.I.

Inelastic pp-interactions with low transfer of momentum. IAd. fiz. 1 no.4:676-680 Ap '65. (MIRA 18:5)

1. Ob'yedinennyy institut yadernykh issledovaniy. 2. Sotrudniki Instituta yadernoy fiziki AN Uzbekskoy SSR (for Azimov, Gulyamov, Rakhimbayev, Chernova).

NEKRASOVA, Tamara Petrovna; ~~CHERNOVA, L.I., red.~~; LOKSHINA, O.A., tekhn. red.

[Fruiting of pine in Western Siberia] Plodonoshenie sosny v Zapadnoi Sibiri. Novosibirsk, Izd-vo Sibirskogo otd-niia Akad. nauk SSSR, 1960. 130 p. (MIRA 14:7)
(Siberia, Western--Pine)

KIRGINTSEV, Aleksey Nikolayevich; MIKHAYLOV, V.A., kand. khim. nauk, otv. red.; CHERNOVA, L.I., red.; LOKSHINA, O.A., tekhn. red.

[Mathematical theory of zone melting processes] Matematicheskaia teoriia protsessov zonnoi plavki. Otv. red. V.A.Mikhailov. Novosibirsk, Izd-vo Sibirskogo otd-nia AN SSSR, 1960. 69 p. (MIRA 14:8)

(Zone melting)

VAKHRUSHEV, Valentin Aleksandrovich; POSPELOV, G.L., otv.red.; CHERNOVA, L.I., red.; MAZUROVA, A.F., tekhn.red.

[Mineralogy, geochemistry, and genesis of iron ores in the Kondoma region of Gornaya Shoriya (Western Siberia)] Voprosy mineralogii, geokhimii i genezisa zheleznykh rud Kondomskogo raiona Gornoi Shorii (Zapadnaia Sibir'). Otvetstvennyi red. G.L.Pospelov. Novosibirsk, Izd-vo Sibirskogo otd-niia AN SSSR, 1959. 188 p. (MIRA 13:6)
(Gornaya Shoriya--Iron ores)

L 09088-67 EWT(m)

ACC NR: AP7002337 SOURCE CODE: UR/0166/66/000/003/0054/0057

AUTHOR: Azimov, S. A.; Gulyamov, U. G.; Rakhimbayev, B. G.; Chernova, L. I.

ORG: Institute of Nuclear Physics, Academy of Sciences Uzbek SSR (Institut yadernoy fiziki AN UzSSR)

TITLE: Inelastic p-p interactions at an energy of 2.26 gev

SOURCE: AN UZSSR. Izvestiya, Seriya fiziko-matematicheskikh nauk, no. 3, 1966, 54-57

TOPIC TAGS: inelastic interaction, meson interaction, nucleon interaction

ABSTRACT: There has recently been developed a model for the single-meson interaction of particles at high energies. It is of great interest to verify the single-meson collison scheme and to compare model predictions with experimental data. This necessitates careful investigations into the dependence of the inelastic nucleon-nucleon interaction σ^{inel}_{NN} on the square of the four-dimensional recoil momentum Δ^2 for several fixed values of the kinetic energy of the primary proton, as well as ascertaining the course of the energy dependence of σ^{inel}_{NN} with a "cut-off" for the quantity Δ^2.

The present article sets forth the results of a study of these questions for a primary proton energy of 2.26 Gev. Used for the investigations was an

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ACC NR: AP7002337

emulsion cloud chamber irradiated by 2.26 Gev protons on a synchrophasotron of OIYaI [Ob"yedinennyy institut yadernykh issledovaniy; Joint Institute for Nuclear Research). The chamber consisted of 236 "R" type emulsion sheets of NIKFI [Nauchno-issledovatel'skiy kinofoto institut; Motion Picture and Photography Scientific Research Institute]. Certain visual and kinematic criteria were used for selecting events for analysis and, as a result, most of the interactions selected were p-p collisions. Orig. art. has: 2 figures and 2 formulas. [JPRS: 38,168]

SUB CODE: 20 / SUBM DATE: 22Feb65 / ORIG REF: 007 / OTH REF: 008

Card 2/2 bp

CHERNOVA, L. M.

Vyvasnovskiy, A. Yu. and Chernova, L. M. - "Schizophrenia -- epilepsy in the light of convulsion therapy", Trudy Astrakh. gos. med. in-ta, Vol. IX, 1948, p. 183-93.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 8, 1949).

CHERNOVA, L.N.

Comparative evaluation of residual air and of vital capacity in pneumosclerosis. Terap. arkh. 27 no.6:57-62 '55. (MLRA 9:2)

1. Iz kliniki (zav. prof. S.I. Ashbel') Gor'kovskogo nauchno-issledovatelskogo instituta gigiyeny truda i professional'nykh zabolevaniy.

(PULMONARY FIBROSIS, physiology,
residual air & vital capacity)
(RESPIRATION,
coc. residual air & vital capacity in pulm. fibrosis)

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B006/B056

23.5000

AUTHORS: Azimov, S. A., Teshabayev, K.T., Chernova, L. P., Chernov, G. M., Chudakov, V. M.

TITLE: Angular Distribution of Shower Particles in Nuclear Interactions Between Fast Nucleons and Heavy Nuclei of Photographic Emulsions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 6(12), pp. 1534-1539

TEXT: The angular distributions of secondary particles were investigated in 70 interaction events of singly-charged or neutral cosmic particles with heavy photoemulsion nuclei. These showers were found during the evaluation of Ilford-G-5 plates, which had been exposed in the stratosphere in 1955, in the course of the Italian expedition. 55 of them had been caused by singly-charged, and 15 by neutral particles. The energies of the primary particles could be determined as amounting to 10^{10} - 10^{12} ev; the showers consisted of more than eight strongly ionizing particles. Symmetry investigations of the angular distributions led to the result that symmetry

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Angular Distribution of Shower Particles in Nuclear Interactions Between Fast Nucleons and Heavy Nuclei of Photographic Emulsions

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exists with respect to the angle $\pi/2$ in a system of reference, in which for half of all particles $\theta^* > \pi/2$ (s-system); the conversion of θ measured in the laboratory system is carried out according to the equation $\gamma_c \tan \theta = \tan(\theta^*/2)$, where γ_c is the Lorentz factor. γ_c is determined from $(\gamma_c)_1 = \operatorname{ctan} \theta_{1/2}$ and $\log (\gamma_c)_2 = \overline{-\log \tan \theta}$, $\gamma_c = \bar{\gamma}_c = \frac{1}{2}\left[(\gamma_c)_1 + (\gamma_c)_2\right]$. Fig. 1 shows the angular distribution in the s-system for secondary shower particles, caused by charged particles a) for $\gamma_c < 3$ (31 showers of 55), and b) for $\gamma_c > 3$. Further, the dispersions for the angular distributions were investigated along with the interrelation between γ_c and the number of the relativistic tracks n_s. ($n_s \geqslant 5$). The mean anisotropy of the angular distribution of the particles in the c-system may quantitatively be characterized by:

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Angular Distribution of Shower Particles in Nuclear Interactions Between Fast Nucleons and Heavy Nuclei of Photographic Emulsions

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$$\sigma = \left[\sum_{i=1}^{N} \sum_{j=1}^{n_i} \left[\log \tan \theta_{ij} - \overline{(\log \tan \theta)_i} \right]^2 \Big/ \sum_{i=1}^{N} (n_i - 1) \right]^{1/2},$$

where n_i is the number of charged secondary particles in the i-th shower with $\theta < \pi/2$, N is the number of showers, σ is between 0.44 and 0.55. The authors thank G. B. Zhdanov for discussions. Zh. S. Takibayev is mentioned. There are 4 figures, 1 table, and 8 references: 5 Soviet, 2 US, and 1 Italian

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Uzbekskoy SSR (Institute of Physics and Technology of the Academy of Sciences of the Uzbekskaya SSR). Sredneaziatskiy gosudarstvennyy universitet ((Soviet) Central Asia State University)

SUBMITTED: June 27, 1960

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88424

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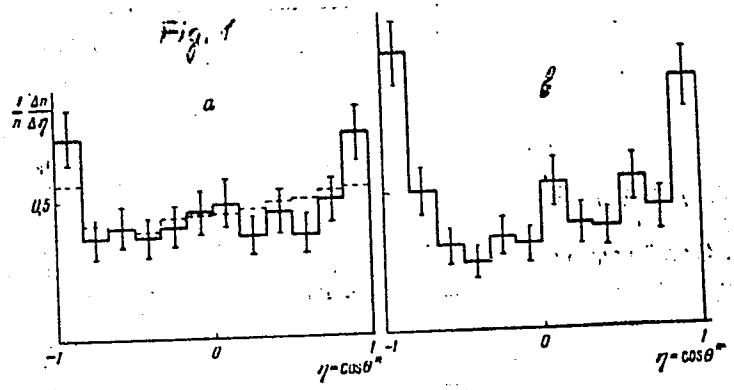
B006/B056

Fig. 1



Text to Fig. 1: a) $\gamma_c < 3$; b) $\gamma_c > 3$; n - total number of secondary partides.

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B102/B138

24.6700 (also 1191)

AUTHORS: Azimov, S. A., Corresponding Member AS Uzbekskaya SSR, Nikishin, B. K., Chernova, L. P., Chernov, G. M., Chudakov, V. M.

TITLE: Investigation of the azimuthal angular distribution of shower particles

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 6, 1961, 65-76

TEXT: This is a continuation of previous studies, covering: investigation of the influence of energy and momentum conservation law on the azimuthal characteristics of secondary particles; study of azimuthal effects in the collision of singly charged cosmic particles with heavy emulsion nuclei ($n_h+n_g>8$) and in pN collisions of 9-Bev primary particles; comparison between theory and experiment. The influence of momentum conservation was studied by evaluating experimental data on random stars imitating the 9-Bev pp collisions of statistical theory. The characteristic parameters [illegible] azimuthal angular distributions were found to be below the values

Investigation of the azimuthal ...

expected for isotropic. The effect of energy and momentum conservation decreases with increasing number of shower particles. Data from nuclear emulsions exposed to 9-Bev protons at the Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research) were used to study the azimuthal effects in pN collisions. Most of the "jets" formed in the emulsion by single charged cosmic particles were pN collisions and displayed an azimuthal anisotropy of the secondary particles. The angular distribution was less disturbed by azimuthal effects than was isotropy. An azimuthal effect was found to be also present in collisions between singly charged cosmic particles and heavy emulsion nuclei ($n_h+n_g > 8$), but it was weaker than in "jets". This is due to the number of nucleons in the target nucleus. The azimuthal anisotropy of secondary particles is in contradiction with the hydrodynamic theory of "jet" formation but agrees with the results of the two-center model. Conservation of angular momentum has also to be taken into account. Some conclusions of the two-center model are discussed. Azimuthal anisotropy indicates the presence of high angular momentum of the excited centers, which can be assumed to be rotating spheres. There are 1 figure, 4 tables, and 21 references:

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B102/B138

Investigation of the azimuthal ...

13 Soviet and 8 non-Soviet. The reference to the English-language publication reads as follows: W. L. Kraushaar, L. J. Marks, Phys. Rev. 93, 326, 1954.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UzSSR (Physico-technical Institute of AS Uzbekskaya SSR)

SUBMITTED: April 7, 1961

Card 3/3

S/166/62/000/004/006/010
B112/B186

AUTHORS: Azimov, S. A., Chernova, L. P., Chernov, G. M., Chudakov, V. M.

TITLE: The nature of the interaction between fast nucleons and heavy nuclei

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 4, 1962, 47 - 51

TEXT: The authors studied experimentally the angular distribution (S-system) of secondary particles in showers produced by charged particles. They observed growth properties of the anisotropy σ which are qualitatively inconsistent with theoretical representations of the interaction between a nucleon and the flight-path "tube" of nuclear matter. If, however, the model of peripheral interactions is applied to rearrangement collisions of fast nucleons with heavy nuclei the increase of anisotropy in the S-system can be explained as due to an increased number of nucleus-target nucleons participating in the collision, as well as to the formation of a great number of ionized particles and the appearance of humps in shower particles. There is 1 figure.

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B112/B186

The nature of the interaction...

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UzSSR (Physico-technical Institute AS UzSSR)

SUBMITTED: April 25, 1961

Card 2/2

DMITRASHKO, Ivan Ivanovich; CHERNOVA, L.P., red.; ZORINA, V.A., tekhn. red.

[Conversion of surplus value into profit, percentage and rent] Prevrashchenie pribavochnoi stoimosti v pribyl', protsent i rentu; v pomoshch studentam zaochnogo i vechernego obucheniia. Pts.1/2. 1963. 79 p. (MIRA 17:1)

ABDUZHAMILOV, Sh.; AZIMOV, S.A.; CHERNOVA, L.P.; CHERNOV, G.M.; CHUDAKOV, V.M.

Azimuthal angular distribution of shower particles producted by cosmic ray particles in a photographic emulsion. Zhur. eksp. i teor. fiz. 45 no.3:407-414 S '63. (MIRA 16:10)

1. Institut yadernoy fiziki AN Uzbekskoy SSR.
(Photography, Particle track)
(Cosmic rays)

ACCESSION NR: AP4042364 S/0056/64/047/001/0024/0029

AUTHORS: Abduzhamilov, Sh.; Azimov, S. A.; Chernova, I. P.; Chernov, G. M.; Chudakov, V. M.

TITLE: Angular distributions of secondary particles in pN collisions at 24 BeV energy

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 1, 1964, 24-29

TOPIC TAGS: pion scattering, angular distribution, nucleon scattering, dispersion analysis, nuclear emulsion

ABSTRACT: The research was undertaken because asymmetric emission of particles was observed in nucleon-nucleon collisions at energies of several hundred BeV (V. V. Guseva et al., Izv. AN SSSR, Ser. fiz., v. 26, 549, 1962. N. A. Dobrotin et al., Nuclear physics v. 35, 152, 1962). The statistical method of dispersion analysis (the F test) is used to check the hypothesis of independent secondary-particle

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ACCESSION NR: AP4042364

emission angles in inelastic pN interactions involving primary protons of equal energy E and equal numbers n of charged secondary particles. The experimental values of F for pN interactions at 24 BeV and for 4--9 charged secondary particles conflict with this hypothesis and indicate nonuniformity of the angular distributions in the laboratory system. This nonuniformity cannot be accounted for by momentum conservation in knock-on collisions and is associated with the particle production mechanism in peripheral interactions. The efficiency of the F-test for determining nonuniform angular distribution in the laboratory system was checked by investigating the random stars obtained from a somewhat different model of NN interactions at 300 BeV, by obtaining the spectrum of meson cloud velocities in the center of mass system and the secondary-particle energy spectrum in the rest system of the meson cloud. An accelerated on- track scanning of plates bombarded with 24-BeV protons in the CERN accelerator has shown that for the stars observed in the emulsion the most values of F exceed unity, meaning that the emission angles of the secondary particles are not independent at least for some

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ACCESSION NR: AP4042364

values of n. The nonuniformity of the angular distributions is similar to the asymmetric c.m.s. particle emission observed in NN collisions at ~10^{11} eV. The peripheral interactions at E-24 BeV remains dominant up to a multiplicity n = 9. "The authors are grateful to W. O. Lock for collaborating in the acquisition of the photographic plates exposed in the CERN accelerator." Orig. art. has: 2 figures and 19 formulas.

ASSOCIATION: Institut yadernoy fiziki Akademii nauk Uzbekskoy SSR (Institute of Nuclear Physics, Academy of Sciences, Uzbek SSR)

SUBMITTED: 23Jan64

SUB CODE: NP ENCL: 00

NR REF SOV: 003 OTHER: 001

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