SUKHOMEL, H.Y., chlen-korrespondent.

Reducing resistance to motion of vessels moving through canals above critical speeds. Dop. AN URSR no.3:209-211 '51. (MLRA 6:9)

1. Akademiya nauk Ukrayins'koyi RSR. 2. Instytut hidrolohiyi i hidrotekhniky Akademiyi nauk Ukrayins'koyi RSR. (Ship resistance)

SUKHOMEL, G.I.

Water flow in culverts. Izv. Inst. gidrol. i gidr. AN URSR 8:108-115 '51. (MIRA 11:4)

1. Chlen-korrespondent AN USSR. (Culverts) (Hydraulics)

ALMAZOV, O.M.; SUKHOMEL, H.Y., diysnyy chlen.

Relation between the hydrochemical and the hydrological regimes of rivers. Dop.AN URSR no.3:208-212 '52. (MLRA 6:9)

1. Akademiya nauk Ukrayins'koyi RSR (for Sukhomel). 2. Instytut hidrobiolohiyi Akademiyi nauk Ukrayins'koyi RSR (for Almazov). (Hydrology)

SUKHOMEL, G.I., diysniy chlen Akademii nauk Ukrains'koi RSR.

On waves and wave resistance during the movement of ships along canals and rivers. Dop.AN URSR no.6:421-424 '53. (MLRA 7:1)

1. Institut gidrologii ta gidrotekhniki Akademii nauk Ukrains'koi RSR.
(Waves)

SUKHOMEL, G.I.; ZASS, B.M., kand. tekhn. nauk.

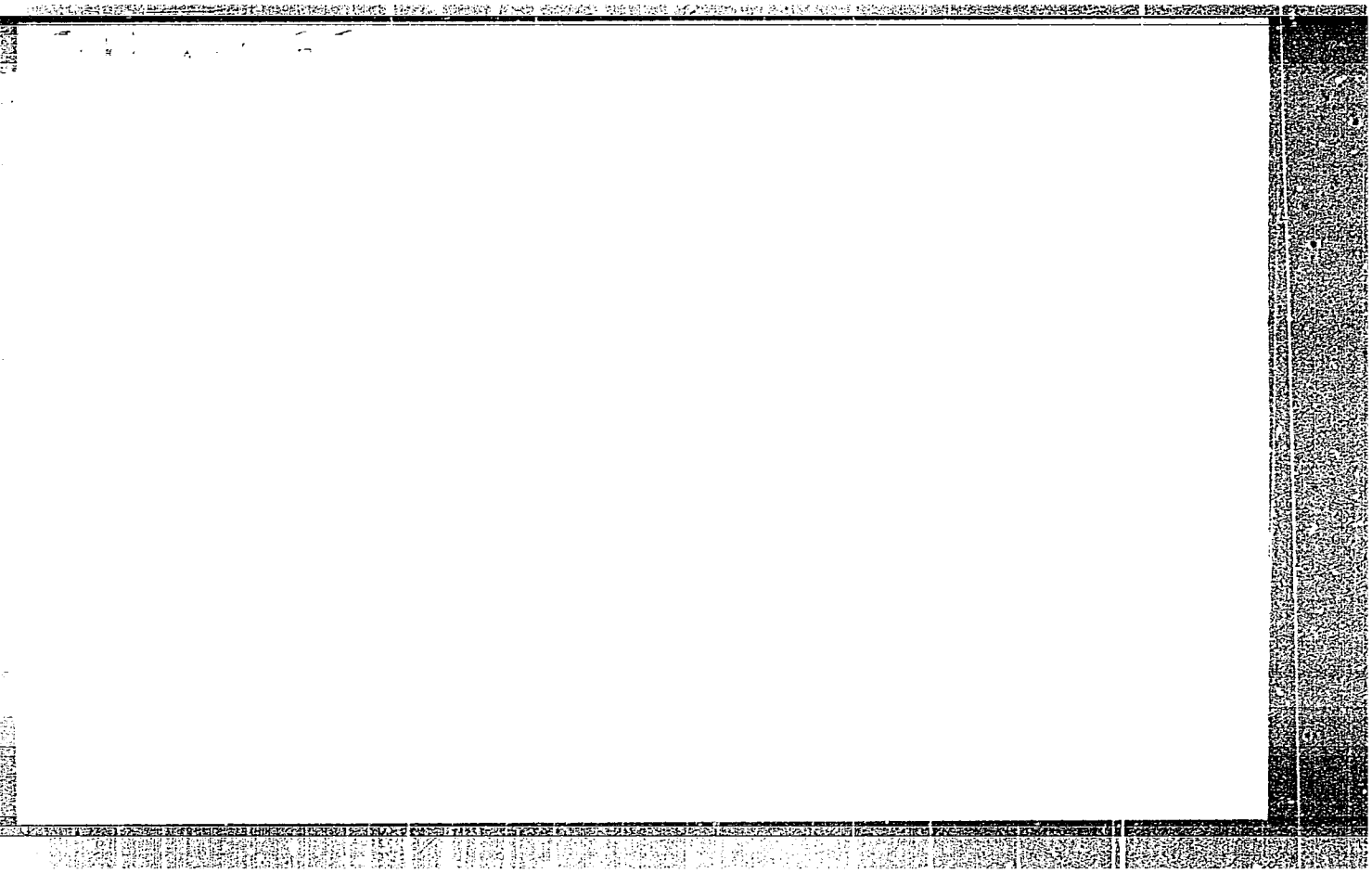
Method of reducing water resistance in shallow canals during the passage of ships at supercritical speeds. Izv. Inst. gidrol. i gidr. AN URSR 9:50-56 '53. (MIRA 11:4)

1. Deystvitel'nyy chlen AN USSR (for Sukhomel).
(Canals) (Shore protection) (Hydrodynamics)

SUKHOMEL, G.I. [Sukhomel, H,I.].

Steady motion of a liquid during "calm" flows around cylindrical bodies. Trudy GGI no.37:3-17 '53. (MIRA 11:6)

1. Chlen-korrespondent AN URSR.
(Hydrodynamics)



APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001653820001-5"

SUKHOMEL, G.I.; ZASS, V.M.; YANKOVSKIY, L.I.

"Settling" of ships moving through canals and shallow river waters.
Izv.Inst.gidrol.i gidr.AN URSR 12:98-128 '55. (MLRA 9:4)
(Hydrostatics) (Ship resistance)

SUKHOMEL, G.I.; SHVETS, G.I.

Development of research in hydrology, hydraulics, and hydraulic engineering in the Ukraine. Izv. Vsat. gidr. AN URSR 13:3-19 '[illegible] (Ukraine--Hydraulic engineering) (MLRA 9:2)

SUKHOMEL, G.I.; ZASS, V.M., kandidat tekhnicheskikh nauk.

"On the method of calculating the draught of vessels during sailing as suggested by Professor V.V.Zvonkov." Rech.transp. 14 no.3:11-14 Mr '55. (MLRA 8:5)

1. Deystvitel'nyy chlen Akademii nauk USSR (for Sukhomel).
(Zvonkov,V.V.) (Ships--Measurement)

ALEKSAPOL'SKIY, D.Ya.; SUKHOMEL, G.I., akademik, otvetstvennyy red.; ZIL'BAN, M.S., red.; ZHUKOVSKIY, A.D., tekhn.red.

Georgii Fedorovich Proskura. Kiev, Izd-vo Akad.nauk USSR, 1956. 19 p. (MIRA 11:1)

1. AN USSR (for Sukhomel).
(Proskura, Georgii Fedorovich, 1876-)

DIDKOVSKIY, Mikhail Mefodiyevich; RODIONOV, Ivan Aleksandrovich; SUKHOMEL, G.I., akademik, otvetstvennyy redaktor; KAZANTSEV, B.A., redaktor izdatel'stva; ZHUKOVSKIY, A.D., tekhnicheskiy redaktor

[Resistance to water movement in large earthen channels] Soprotivlenie dvizheniiu vody v bol'shikh zemlianykh kanalakh. Kiev, Izd-vo Akademii nauk USSR, 1956. 77 p. (MLRA 10:1)

1. Akademiya nauk USSR (for Sukhomel)
(Hydraulics) (Canals)

SUKHOMEL, Georgiy Iosifovich; ZASS, Viktor Moyseyevich; YANKOVSKIY, Lev Ignat'yevich; DIDKOVSKIY, M.M., kandidat tekhnicheskikh nauk, otvetstvennyy redaktor; ZIL'BAN, M.S., redaktor izdatel'stva; RAKHLINA, N.P., tekhnicheskiy redaktor

[Studies of movement of ships in a restricted channel] Issledovanie dvizheniia sudov po ogranichennym farvateram. Kiev, Izd-vo Akademii nauk Ukrainskoi SSR, 1956. 162 p. (MLRA 10:2)
(Ships--Hydrodynamics)

SOV/124-57-9-10348

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 9, p 65 (USSR)

AUTHORS: Sukhomel, G. I., Nikitochkin, O. G.

TITLE: On the Formation of Whirlpools in Front of Water Gates in Canals (Ob obrazovanii voronok pered shchitami, peregorazhivayushchimi kanaly)

PERIODICAL: Tr. Kiyevsk. gidromelior. in-ta, 1956, Nr 5, pp 21-27

ABSTRACT: The paper describes laboratory investigations and presents certain theoretical reasonings on the subject under consideration. According to the observations made by the authors during the flow of water from under the gate in a rectangular channel, two symmetrically-located whirlpools appear in front of the water gate, one on either side. The water level at the gate rises somewhat, this rise being greater at the center of the gate. The deduction is made that owing to the uneven rise of the level at the gate currents are caused to be directed towards the corners and later along the side walls in a direction opposite to the main current in the channel, which is possible in the presence of a slow-speed wall boundary layer. The authors consider the latter to be the cause, or at least one of the causes, of the formation of

SOV/124-57-9-10348

On the Formation of Whirlpools in Front of Water Gates in Canals

the whirlpools. In the investigations conducted the intensity of a whirlpool formation is characterized by the degree of the transporting capacity of the whirlpool, namely, the number of uniform objects passing through the whirlpool in a specific period of time. According to the test results, an increase in the intensity of the whirlpool formation results in a decrease both of the velocity coefficient ϕ and of the discharge capacity of the gate aperture. As a result of the elimination of whirlpools by means of baffles preventing back currents at the gate the coefficient ϕ can be increased by 1.5 - 3%. The formation of whirlpools occurs in both unsubmerged and submerged outflows. The authors also repeated the tests made by V. S. Fokeyev (Gidrotekhn. str-vo, 1951, Nr 5; Gidrotekhn. i melioratsiya, 1951, Nr 12). The eddy-stimulator water gate recommended by him has contributed toward an increase in the intensity of the whirlpools. A paper by S. M. Isaakyan (RZhMekh, 1957, abstract 533) is devoted to a question similar to that under review.

N. A. Pritvits

Card 2/2

SOV/124-58-7-7617

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 7, p 41 (USSR)

AUTHOR: Sukhomel, G.I.

TITLE: Local Energy Losses in Hydraulics (Mestnyye poteri energii v gidravlike)

PERIODICAL: Tr. Kiyevsk. gidromelior. in-ta, 1956, Nr 6, pp 3-14

ABSTRACT: The problem in question is given here a more rigorous treatment than in some of the textbooks, though it is a treatment which differs but little (in details and in the final results) from that accorded this same problem in the works of other authors.

V.M. Makkaveyev

1. Fluid mechanics--Theory 2. Hydraulic systems--Performance

Card 1/1

SOV/124-58-10-11141

Translation from: Referativnyy zhurnal. Mekhanika. 1958, Nr 10. p 62 (USSR)

AUTHOR: Sukhomel, G. I.

TITLE: On the Length of a Perfect Hydraulic Jump in Non-rectangular Channels (O dline sovershennogo gidravlicheskogo pryzhka v ruslakh nepryamougol'nogo secheniya)

PERIODICAL: Izv. in ta gidrol. i gidrotekhn. AN UkrSSR, 1956, Vol 14 (21) pp 3-6

ABSTRACT: The author considers that the length of a perfect hydraulic jump in a trapezoidal channel is greater than in a rectangular channel of equal depth. An attempt is made in the article to clarify, by means of elementary discussions and calculations, one of the reasons for this situation. In the beginning of the article the author asserts that M. D. Chertousov [Spetsial'nyy kurs gidravliki (Special Course in Hydraulics). Gosenergoizdat, 1949] and V. N. Yevreinov [Gidravlika (Hydraulics): Izd-vo M-va rechnogo flota SSSR. 1947] had pointed out that the length of a jump in trapezoidal channels is greater than in rectangular ones. This reference is incorrect. Indeed, V. N. Yevreinov in the work

Card 1/2

SUKHOMEL, G.; ZASS, V.

M.A.Sutyrin's article "More on draft changes of a moving ship."
Rech.transp. 15 no.8:18-19 Ag '56. (MLRA 9:11)
(Displacement (Ships))
(Sutyrin, M.A.)

SOV/21-58-2-12/28

AUTHOR: Sukhomel, G.I., Member of the AS UkrSSR

TITLE: On Free Surfaces of Water Streams Constrained by Hydrofoils and the Wave Resistance of Hydrofoils (O svobodnykh poverkhnostyakh potokov, stesnennykh podvodnymi kryl'yami, i o volnovom soprotivlenii podvodnykh kryl'yev)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 2, pp 166-170 (USSR)

ABSTRACT: The Hydraulic Laboratory of the Kiyev Hydro-Melioration Institute and the Institute of Hydrology and Hydraulic Engineering of the AS UkrSSR carried out experiments in 1956 to determine the characteristics of a water stream into which a body, in particular a hydrofoil, was immersed. Some previous theoretical considerations of the author [Ref 1,2] were confirmed by these experiments. He applies the notion of the specific energy of a cross section and shows that some lowering of the water level over the hydrofoils followed by waves occurs at low velocities. At high speeds, on the contrary, a certain raise of the water level without following waves takes place. This circumstance explains why hydrofoils undergo a relatively low wave resistance at high speeds. The shapes of the water surfaces at low and

Card 1/2

On Free Surfaces of Water Streams Constrained by Hydrofoils and the Wave Resistance of Hydrofoils

high velocities, obtained by the author's theoretical researches, were actually observed in laboratory experiments. There are 5 schematic diagrams, 2 graphs and 5 references, 4 of which are Soviet and 1 English

ASSOCIATION: Institut gidrologii i gidrotekhniki AN UkrSSR (Institute of Hydrology and Hydraulic Engineering of the AS UkrSSR)

SUBMITTED: May 27, 1957

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration

SUKHOMEL, G.I.

Conferring honorary status on the Academician of the Academy of Sciences of the Ukrainian S.S.R. Prykl. mekh. 4 no.1:117 '58.
(Sukhomel, Georgii Iosifovich, 1888) (MIRA 11:4)

SUKHOMEL, G.I., akademik; DIDKOVSKIY, M.M., kand. tekhn. nauk

Whirlpools in open "calm" streams. Izv. Inst. gidrol. i gidr. AN URSR 15:54-59 '59. (MIRA 12:9)

1.AN USSR (for Sukhomel).
(Whirlpools)

SUKHOMEL, G.I. [Sukhomel,H.I.], akademik

Initial conditions in the hydraulics of open channels and structures. Dop.AN URSR no.9:1202-1205 '60. (MIRA 13:10)

1. AN USSR i institut gidrologii i gidrotekhniki AN USSR.
(Hydraulics)

SUKHOMEL, G.I. [Sukhomel, H.I.], akademik

Some considerations on the dissipation and local losses of energy in a stream with a free surface. Visti Inst.gidrol.i gidr.AN URSR 18:3-18 '61. (MIRA 15:3)

1. AN USSR.

(Hydraulics)

DIDKOVSKIY, M.M., kand. tekhn. nauk, otv. red.; DYATLOVITSKIY, L.I., doktor tekhn. nauk, red.; ROZOVSKIY, I.L., doktor tekhn. nauk, zam. otv. red.; NIKITIN, I.K., kand. tekhn. nauk, red.; PYSHKIN, B.A., red.; SILIN, N.A., kand. tekhn nauk, red.; SUKHOMEL, G.I., akademik, red.; SHTEPANEK, S.I., kand. tekhn. nauk, red.; GILELAKH, V.I., red.

[Hydraulic engineering and fluid mechanics] Gidrotekhnika i gidromekhanika. Kiev, Naukova dumka, 1964. 217 p. (MIRA 17:12)

1. Akademiya nauk URSR, Kiev. Instytut hidromekhaniky. 2. Chlen-korrespondent AN Ukr.SSR (for Pyshkin). 3. AN Ukr.SSR (for Sukhomel).

SUKHOMEL, Georgiy [illegible]; DIDKOVSKIY, M.M., kand. tekhn. nauk, otv. red.; REMENNIK, T.K., red.

[Investigation of the hydraulics of open channels and installations] Issledovaniia gidravliki otkrytykh rusel i sooruzhenii. Kiev, Naukova dumka, 1965. 110 p. (MIRA 18:8)

SUKHOMEL, G.I. (Kiyev); LIPAY, I.Ye. (Kiyev)

Effect of the inclination of the upper margin of an apron on the reliability of its function. Prikl. mekh. 1 no.5:123-126 '65. (MIRA 18:7)

1. Institut gidromekhaniki AN UkrSSR.

SUKHOMEL, G.I. [Sukhomel, H.I.]

"Branching" of curves representing the pressure of water on a scow and the curves of ship resistance during movement in limited fairways. Visti Inst. hidrol. i hidr. AN URSR 22: 81-85 '63.

Permissible speeds of ships moving in limited fairways and the corresponding revolution rates of ship engines. Ibid.:102-106 (MIRA 18:11)

L 20724-66

ACC NR: AP6012000 SOURCE CODE: UR/0198/65/001/005/0123/0126

AUTHOR: Sukhomel, G. I. (Kiev); Lipay, I. Ye. (Kiev)

ORG: Institute of Hydraulic Engineering, AN UkrSSR (Institut gidromekhaniki AN UkrSSR)

TITLE: Effect of inclination of upper edge of an apron on its reliable functioning

SOURCE: Prikladnaya mekhanika, v. 1, no. 5, 1965, 123-126

TOPIC TAGS: hydrodynamics, hydraulic engineering

ABSTRACT: The problem as stated in the title is reported in this article. Results of laboratory experiments are given which indicate that aprons with inclined upper edges and also walls of a cascade configuration may prove to be unsafe baffles. Recommendations of allowable angles for these structures are given. Orig. art. has: 3 figures and 2 formulas. [JPRS]

SUB CODE: 20, 13 / SUBM DATE: 20Aug64 / ORIG REF: 004 / OTH REF: 001

Card 1/1

G. I.

SUKHOMEL, G.Y. [Sukhomel, H.I.]

Two sharply distinct forms of the movement of water in stilling basins and imperfections in their hydraulic calculation. Visti Inst.hidrol. hidr. AN URSR 21:3-7 '62. (MIRA 16:4)
(Hydraulics)

PYSHKIN, Boris Andreyevich; PECHKOVSKAYA, O.M., red.izd-va; MONZHERAN, P.F., tekhn. red.; SUKHOMEL, G.I., akademik, retsenzent; SRIBNYY, M.F., retsenzent; RUSAKOV, S.V., kand. tekhn. nauk, retsenzent; ROZOVSKIY, I.L., kand. tekhn.nauk, retsenzent; PECHKOVSKAYA, O.M., red. izd-va; MONZHERAN, P.F., tekhn. red.

[Problems in the dynamics of reservoir banks] Voprosy dinamiki beregov vodokhranilishch. Izd.2., perer. i dop. Kiev, Izd-vo AN Ukr.SSR, 1963. 331 p. (MIRA 16:7)

1. AN Ukr.SSR (for Sukhomel). 2. Chlen-korrespondent AN Ukr. SSR (for Sribnyy).
(Reservoirs)

SUKHOMEL, E. G.

E.G. Sukhomel. Errors in measurements with lever tensimeters and wire resistance meters in tests for statics. P. 1231

Lab. of Machine Construction and
Problems of Agricultural Mech.
Acad. of Sci.,
Ukrainian SSR

SO: Factory Laboratory, No. 10, 1950

KHAMARENKO, O.Yu.; LIVSHITS, Ye.D.; SUKHOMEL, Ye.G.

Investigation stresses in frames of tractor-drawn seeders. Kazan. trudy Inst. zash. i sel'khoz. mekh. AN URSR 3:95-120 '51.
(Drill (Agricultural implement)) (MLRA 10:8)

SUKHOMEL, Ye. G.

124-58-9-10686

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 173 (USSR)

AUTHOR: Sukhomel, Ye. G.

TITLE: On the Accuracy of the Strain Determination by Means of Lever-type Strain Gages in Structural Metal Parts (O tochnosti opredeleniya napryazheniy rychazhnymi tenzometrami v chastyakh metallicheskikh konstruktsiy)

PERIODICAL: Tr. Kiyevsk. gidromelior. in-ta, 1954, Vol 4, pp 129-133

ABSTRACT: Bibliographic entry

1. Metals--Deformation 2. Strain gages--Applications

Card 1/1

SUKHOMEL, Ye.G.

Errors in determining axial and bending stress on the basis of measured deformations. Nauch. trudy Inst. mash. i sel'khoz. mekh. AN UkSSR no.5:62-69 '55. (MLRA 9:2)
(Strains and stresses)

124-11-13639

Translation from: Referativnyy Zhurnal, Mekhanika, 1957, Nr 11, p 181 (USSR)

AUTHOR: Sukhomel', Ye G.

TITLE: The Accuracy of Stress Measurements by Means of Wire Strain Gages in Portions of Metal Structures (Tochnost' opredeleniya napryazheniy provolochnymi tenzodatchikami soprotivleniya v chastyakh metallicheskikh konstruktsiy)

PERIODICAL: Tr Kiyevsk. gidromelior. in-ta, 1956, Nr 5, pp 257-263

ABSTRACT: The paper presents the results of an investigation of errors arising in the measurement of static deformations by means of wire gages inserted in a direct-current Wheatstone bridge and read on a mirror-type galvanometer. The systemic error component constituted only 16 per cent of the error incurred through inaccuracies in the preparation and bonding of the strain gages. It is recommended that, of a given batch of strain gages, not less than twenty be tested and the root-mean-square error of the measurements be determined therefrom. It is further recommended that the errors be reduced by calibrating the strain gages on samples of the same material as that under examination.

(M. M. Belyayev)

Card 1/1

SOV/124-58-3-3609

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 3, p 140 (USSR)

AUTHOR: Sukhomel, Ye. G.

TITLE: The Effect of an Error in the Magnitude of the Modulus of Elasticity on the Accuracy of Stress Determinations by Means of Resistance Wire Strain Gages (Vliyaniye pogreshnosti v velichine modulya uprugosti na tochnost' opredeleniya napryazheniy provolochnymi tenzodatchikami soprotivleniya)

PERIODICAL: Tr. Kiyevsk. gidromelior. in-ta, 1956, Nr 6, pp 245-250

ABSTRACT: Bibliographic entry

Card 1/1

SUKHOMEL, Z., inzh. (g. Litvinov, ChSSR)

For further development of Czhechsolovak industry. Stroi. truboprov. 5 no.12:4-6 D '60. (MIRA 13:12)
(Czhechoslovakia--Petroleum--Pipelines)

GASANENKO, A.; SUKHOMLIN, F.

Sowing grain into slightly frozen soil. Nauka i pered. op. v sel'-khoz. 18 no.2:59 F '58. (MIRA 11:3)

1. Direktor sovkhoza "Stepnoy" (for Gasanenko). 2. Glavnyy agronom sovkhoza "Stepnoy" (for Sukhomlin).
(Grain)

MAMON, L.I.; LOKSHIN, M.A.; KUZ'MIN, V.P.; SUKHOMLIN, G.D.

Investigating fluid leakage in external contact stuffing boxes. Izv. vys. ucheb. zav.; neft' i gaz 8 no.3:91-94 '65. (MIRA 18:5)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut im. F.E. Dzerzhinskogo.

22(3) SOV/175-58-6-23/41

AUTHOR: Sukhomlin I., Guards Colonel

TITLE: Tank Troopers Need Comfortable Clothing and Equipment

PERIODICAL: Tankist, 1958, Nr 6, pp 33-34 (USSR)

ABSTRACT: The author surveys the tank crews winter clothing. They have quilted jackets and trousers, cotton overalls, mittens and boots. The same kind of clothing is worn by other branches of the army, though the tank crews' working conditions are different from those of the other troops. The author reviews in detail the inadequacy in clothing and equipment of the tank crews. He points out the shortcomings not only in the quality of the clothing but also in their shape and cut. He proposes to replace the overalls by two-piece suits. He also describes a kind of comfortable trousers provided with pockets. Finally

Card 1/2

S/018/62/000/011/001/001
D047/D112

AUTHORS: Sukhomlin, I., Guards Colonel, and Ponomarenko, V., Guards Senior Engineer-Lieutenant

TITLE: A new method of decontaminating tanks

PERIODICAL: Voyennyy vestnik, no. 11, 1962, 109-110

TEXT: A device is described for the decontamination of tanks from radioactive matter. It was invented in the authors' subunit and has been successfully tested in field conditions. The device consists of an ordinary M3A-3 (MZA-3) fuelling unit provided with a sprayer. Fuel or a special decontaminating solution from an outer container is used as the decontaminating agent. About 30 liters of fluid are sufficient for decontaminating one tank in 15 minutes. The fluid is sprayed on the tank under a pressure of 0.7-1 atm. When using fuel from an outer fuel tank, the latter must be uncoupled and rolled up to the turret, since the hose of the MZA-3 is only 5500 mm long and cannot reach the front of the tank. There are 2 figures.

Card 1/1

USSR / Human and Animal Physiology. Thermoregulation. T

Abs Jour: Ref Zhur-Biol., No 9, 1958, 41108.

Author : ~~Sukhomlin, K. G.~~
Inst : Kuban Agricultural Institute.
Title : Thermoregulation in Kuban Cattle.

Orig Pub: Tr. Kubansk. s.-kh. in-ta, 1957, vyp 3 (31), 82-88.

Abstract: No Abstract.

Card 1/1

KOSTIN, A.P.; SUKHOMLIN, K.G.

Reactions of cutaneous blood vessels to heat and cold in cattle. Fiziol. zhur. 47 no.3:329-335 Mr '61. (MIRA 14:5)

1. From the Animal Physiology Chair of the Agricultural Institute, Krasnodar.
(SKIN--BLOOD SUPPLY) (TEMPERATURE--PHYSIOLOGICAL EFFECT)

Construction Industry

"Consolidated accounting of equipment in construction organizations." Bukhg. uchet, 11, No. 5, 1952.

Monthly List of Russian Accessions. Library of Congress, August 1952, UNCLASSIFIED.

SUKHOLL, I.

Transportation, Automotive - Accounting

Cumulative form for supplementary wages of piece-work chauffeurs. Bukhg. uchet 11, No. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1952, UNCL.

SUKHOMLIN, P.I.

Road construction workers are prepared for the anniversary celebration of T.G.Shevchenko. Avt.dor. 27 no.1:31-32 Ja '64. (MIRA 17:4)

SUKHOMLIN, P.I.

Regulate the organization of road maintenance service.
Avt. dor. 27 no.9:8 S '64. (MIRA 17:11)

KURILENKO, O.D.; SUKHOMLIN, R.I.

Dielectric properties of activated carbon suspensions in benzene.
Trudy KTIPP no.21:123-126 '59. (MIRA 14:1)
(Carbon, Activated—Electric properties)

KURILENKO, O.D.; SUKHOMLIN, R.I.

Possibilities for the use of high-frequency conductometric method in studying saturation. Izv. vys. ucheb. zav.; pishch. tekh. no.4:142-145 '61. (MIRA 14:8)

1. Kiyevskiy tekhnologicheskiy institut pishchevoy promyshlennosti, kafedra fizicheskoy, kolloidnoy i analiticheskoy khimii.
(Conductometric analysis) (Sugar industry)

[illegible], [illegible] SUKHOMLIN, F.

Determination of potassium and sodium in molasses. Trudy KTIPP no.27:55-60 '63. (MIRA 17:5)

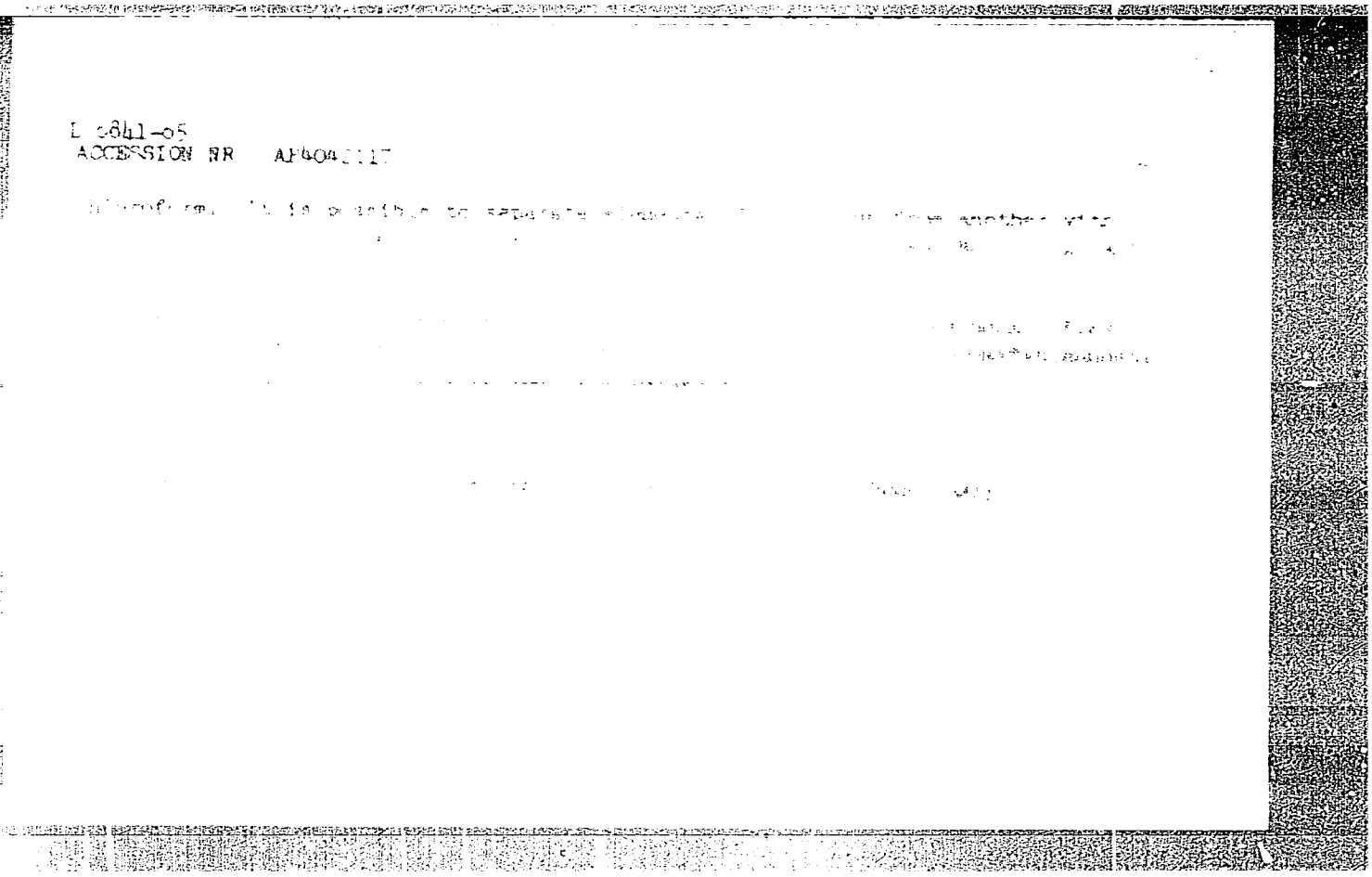
L 6841-65 AFWL

ACCESSION NR: [illegible] .../0750/0753

[illegible] reagent

TOPIC TAGS: analytical reagent, N cinnamoylphenylhydroxylamine, Teflon,

1/2



ZHAROVSKIY, F.G.; SUKHOMLIN, R.I.

Successive extraction-photometric determination of iron (III), vanadium (V), uranium (VI) as cinnamoylphenylhydroxylaminates. Zhur. anal. khim. 21 no. 1:59-64 '66 (MIRA 19:1)

1. Kiyevskiy gosudarstvennyy universitet imeni Shevchenko i Kiyevskiy tekhnologicheskiy institut pishchevoy promyshlennosti.

FOMIN, Yu., dots.; SUKHOMLIN, V.K., inzh.; REMESKOV, A., inzh.

Purification of the circulating oil system on "Kazbek"-type tankers. Mor.flot 19 no.12:35-36 D '59.
(MIRA 13:3)

1. Odesskiy institut inzhenerov morskogo flota (for Fomin).
(Marine diesel engines--Lubrication)

SUKHOMLIN, V.R., inzh.; FOMIN, Yu.Ya., dotsent

Taking measures to mechanize and automate the power plant of "Kazbek" type tankers. Biul.tekh.-ekon.inform.Tekh.upr.Min.mor.flota 5 no.4: 13-29 '60. (MIRA 15:1)

1. Odesskiy institut inzhenerov morskogo flo[redacted]
(Tank vessels) (Marine engineering) (Automatic control)

VILENTS, L.; SUKHOMLIN, Ya.

Fireproof building on Ukrainian collective farms. Pozh.delo 4 no.9: 9-10 S '58. (MIRA 11:9)

1.Nachal'nik otdela stroymaterialov Glavkolkhozstroya Ministerstva sel'skogo khozyaystva USSR (for Vilents). 2.Starshiy inspektor Upravleniya pozharnoy okhrany USSR (for Sukhomlin).
(Ukraine--Collective farms--Fires and fire prevention)

BORISOV, M.D.; SUPRUNENKO, V.A.; SUKHOMLIN, Ye.A.; VOLKOV, Ye.D.

[Stability of a heavy-current discharge in hydrogen at low electric field strength] Issledovanie ustoichivosti vysokotochnogo razriada v vodorode pri malykh napriazhennostiakh elektricheskogo polia. Khar'kov, Fizikotekhn. in-t AN USSR, 1960. 307-338 p. (MIRA 17:1)
(Electric discharges through gases)

27167
S/057/61/031/009/007/019
B104/B102

24.6750 also 3117

AUTHORS: Suprunenko, V. A., Sukhomlin, Ye. A., Volkov, Ye. D., and Rudnev, N. I.

TITLE: Conductivity of the plasma of a linear pinch

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 9, 1961, 1057-1060

TEXT: The conductivity of a linear hydrogen plasma pinch was studied by means of magnetic probes. The experimental arrangement consisted of a porcelain tube (inside diameter 18 mm, length 42 cm). To reduce the role of the escaping electrons, a potential of - 4 kv was applied to the electrodes of the discharge tube. The field strength was varied between 1 and 10 v/cm, the current in the gas was 100 ka Pre-ionization was achieved by a Penning discharge; a constant magnetic field of up to 1 kilogauss was generated by Helmholtz coils. This magnetic field was simultaneously used as a stabilizing field. The hydrogen pressure in the discharge tube was $1.5 \cdot 10^{-2}$ mm Hg. The condenser battery had a capacity of 15 μf, and was charged to 30 kv. Discharge was performed with a pulse

Card 1/4

Conductivity of the plasma of a

transformer, the secondary circuit of which comprised the discharge tube. The voltage was reduced by the transformer in the ratios of 1:6 to 1:3. Discharge current and distribution of the magnetic field were measured with different voltages in the discharge tube. The topography of the magnetic field was measured with nine magnetic probes. The signals of these probes were observed with five OK-17M (OK-17M) double-trace oscilloscopes. According to the distribution of H_z and H_φ, the authors determined the current density, the electric field strength in the plasma, and the conductivity of the latter. They determined the intensity distribution of the H_γ lines of the Balmer series of hydrogen by a monochromator and a photomultiplier. Besides, they filmed the discharge with a movie camera. They found the density of charged particles in the plasma to be 10^{16} ions/cm^3. Fig. 1 shows that the conductivity of the plasma and the time of existence of a pinch decrease with increasing field strength. This behavior of the plasma can be explained by the theory developed by L. Spittser (L. Spitzer) (Fizika polnost'yu ionizirovannogo gaza (Physics of the fully ionized gas). IL, p. 97, 1957).

Card 2/4

Conductivity of the plasma of a...

Another possible explanation for the found dependence of the electrical conductivity on the electric field is given by considering the interaction of electrons with neutral atoms, which practically always occurs in a discharge. From a certain temperature depending on the degree of ionization of the plasma, the electron interaction with neutral particles is shown to surpass the interaction with ions. The respective critical temperature was estimated to be 30 ev. V. D. Shapiro is mentioned. The authors thank K. D. Sinel'nikov, Academician of the AS UkrSSR, and Ya. B. Faynberg for discussions, as well as N. I. Rev, Degree Student at the Gosudarstvennyy universitet im. Gor'kogo (State University imeni Gor'kiy), for his help. There are 2 figures and 9 references: 4 Soviet and 4 non-Soviet. The two references to English-language publications read as follows: L. C. Burkhardt et al., Nature, 181, 229, 1958; Project Sherwood, Massachusetts, 209, 1958.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR Khar'kov
(Physicotechnical Institute AS UkrSSR, Khar'kov)

SUBMITTED: October 10, 1960

Card 3/4

ID 2000
26.2321

25778
S/057/61/031/010/011/015
B109/B102

AUTHORS: Suprunenko, V. A., Volkov, Ye. D., Reva, N. I., Sukhomlin, Ye. A., Burchenko, P. Ya., and Rudnev, N. I.

TITLE: Study of dynamics of a pinch in a magnetic field

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 10, 1961, 1246-1247

TEXT: The behavior of a pinch with respect to m = 1-type instabilities was investigated experimentally. Test arrangement: Discharge tube made of porcelain: Inner diameter 18 cm, length 42 cm, hydrogen filling ($p = 1.5 \cdot 10^{-2}$ mm Hg). Current source: 15-microfarad capacitor. Discharge period: 30 to 60 μsec. The discharge tube contained nine magnetic probes for determining the H_φ and H_z distributions. The measured values were recorded by five synchronized oscilloscopes OK-17M (OK-17M). Distribution of charge, current density, etc., were thus known for any point. Measuring results: The deviation amplitude of the discharge from the axis of the discharge tube is proportional to $\sqrt{E}$ (E - field strength), i. e., proportional to the current density (for measured values see Fig.3). The radial velocity of the discharge, that is also growing linearly with

Card 1/2

X 2

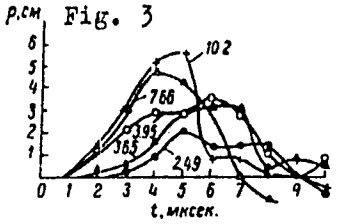
$\sqrt{E}$, shows the same qualitative behavior. V. D. Shafranov (Sb. "Fizika plazmy", t. 4, str. 130, 1958) is mentioned. There are 5 figures and 3 Soviet references.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR Khar'kov (Physico-technical Institute AS UkrSSR, Khar'kov)

SUBMITTED: January 31, 1961

Fig. 3. Deviation of the discharge from the tube center at different electric field strengths in the plasma. E varies between 10.2 and 2.49 v/cm. Abscissa: time in μsec.

Fig. 3



Operation of controllable spark...

the ignition voltage can be made smaller than 10^{-7} sec by a proper choice of the parameters of the ignition pulse. Special attention was paid to a reduction of power losses of the igniting pulse. Strong magnetic fields of great duration were generated by the circuit shown in Fig. 7. The pulses had rather a steep front with weakly sloping back side. The igniting pulse was formed by discharge of a 3-microfarad capacitor at 10+40 kv over an auxiliary spark gap P_3. The spark gap operates quite accurately in the voltage range investigated. In some experiments on the reduction of inductivity of the bars, each capacitor of the battery has to be connected with the bus bar over a separate spark gap. In this case, the simultaneous response of all spark gaps is important. This is guaranteed by the fact that the igniting pulse reflected from the discharge interval arrives at the collector when the discharge over the other spark gaps has already begun. For dependable operation of the spark gaps with parallel connection, the voltage on the principal electrodes should not differ too much from the static spark-over voltage. Therefore, the interspace between principal electrodes should be quickly and accurately adjustable. There are 10 figures and 5 references: 3 Soviet and 2 non-Soviet. The two references to English-language publications read as

Card 2/4

S/781/62/000/000/028/036

AUTHORS: Borisov, M. D. (deceased), Suprunenko, V. A., Sukhomlin Ye. A., Volkov, Ye. D.

TITLE: Investigation of stability of high-current discharge in hydrogen at low electric field intensities

SOURCE: Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza; doklady I konferentsii po fizike plazmy i probleme upravlyayemykh termoyadernykh reaktsiy. Fiz.-tekh. inst. AN. Ukr.SSR., Kiev, Izd-vo AN Ukr. SSR, 1962. 133-138

TEXT: A self-constricting discharge in a longitudinal magnetic field was investigated for stability in either a constant or programmed magnetic field, with a stabilizing screen used to increase the magnetic-field gradient on the discharge boundary, as called for by Suydam's criterion. The discharge was produced with a 15 microfarad capacitor bank with maximum stored energy 18.7 kilojoules. A rapidly alternating magnetic field was produced in the porcelain discharge chamber by a coper busbar loop, which served simulta-

Card 1/2

Card 2/2

SUKHOMLIN, YE. A.

AID Nr. 981-5 3 June

COHERENT EM RADIATION FROM A HIGH CURRENT DENSITY PLASMA (USSR)

Suprunenko, V. A., Ya. B. Faynberg, V. T. Tolok, Ye. A. Sukhomlin, N. I. Reva, P. Ya. Burchenko, N. I. Rudnev, and Ye. D. Volkov. Atomnaya energiya, [redacted]14, no. 4, Apr 1963, 349-352. S/089/63/014/004/001/019

Results are given of experiments with plasma discharges at high current densities. Intense radial EM radiation was detected which was coherent and close to Langmuir frequency. Test apparatus included an alundum discharge tube, 10 cm in diameter and 25 cm in length, charged with H_2; aluminum electrodes, connected by a 15-μf capacitor bank charged to 30-40 kv and yielding a discharge current of about 100 kamp; an axial magnetic field variable from 0 to 10 kgs. Efforts to insure repeatability included the use of metal vacuum seals and a titanium pump, the baking of the apparatus at 300°C, and preionization of the gas mixture prior to discharging. Electric field gradients of 300-500 v/cm gave a high "runaway" electron condition in the discharge beam.

Card 1/2

AID Nr. 981-5 3 June

COHERENT EM RADIATION [Cont'd] S/089/63/014/004/001/019

This current was measured by means of a Faraday cell and a Rogovsky belt, both located at one electrode. A typical test result at a 6-kgs field strength and a 3-4-μsec plasma life showed that coherent EM radiation received by a horn antenna through the tube wall and detected over the 8-14.4-mm wavelength region was as much as 10^7 times more intense than thermal radiation from a plasma of 10-ev electron temperature, and was constant along the column. Coherence was detected by two probe antennas placed 11 mm apart in the column and connected to an 8-mm interferometer. Variation of the magnetic field from 0 to 8 kgs had no effect on observed radiation. Variation of other parameters revealed a sharply critical value of runaway electron current, below which radiation is absent and above which it rises rapidly in intensity accompanied by a dip in runaway current. This verified a casual relationship between the two. The relation of radiation intensity to initial gas pressures and to radial distance from the plasma column are also discussed. [SH]

Card 2/2

ACCESSION NR: AT4036051 S/2781/63/000/003/0144/0150

AUTHORS: Suprunenko, V. A.; Faynberg, Ya. B.; Tolok, V. T.; Sukhomlin, Ye. A.; Reva, N. I.; Burchenko, P. Ya.; Rudnev, N. I.; Volkov, Ye. D.

TITLE: Coherent interaction of runaway electrons in a pinch

SOURCE: Konferentsiya po fizike plazmy* i problemam upravlyayemogo termoyadernogo sinteza. 3d, Kharkov, 1962. Fizika plazmy* i problemy* upravlyayemogo termoyadernogo sinteza (Plasma physics and problems of controlled thermonuclear synthesis); doklady* konferentsii, no. 3. Kiev, Izd-vo AN UkrSSR, 1963, 144-150

TOPIC TAGS: plasma pinch, plasma radiation, plasma ion oscillation, plasma electron oscillation, plasma compression, discharge plasma

ABSTRACT: The coherent radiation of transverse electromagnetic waves with frequency close to $\omega_0 (m_e/m_i)^{1/3}$ (ω_0 -- frequency of longi-

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ACCESSION NR: AT4036051

tudinal oscillations, m_e -- electron mass, M_i -- ion mass) excited in a plasma by a beam of "runaway electrons," was investigated. The experiments were carried out in a straight tube (alundum, 10 cm dia, 25 cm long) usually filled with hydrogen at 1.3 n/m^2, through which a 15 F capacitor bank was discharged from 30--40 kV. Preliminary experiments with the setup were reported elsewhere (ZhTF, v. 30, 1057, 1961). In the present experiment the formation of the current of runaway electrons was investigated along with its correlation with the electromagnetic radiation of the plasma; some characteristics of this radiation were also investigated. The measurements have shown that an electron current, with energy equal to the maximum energy, constituted a small fraction of the total runaway electron current, the bulk of the current being due to electrons with energy somewhat higher than thermal but much lower than maximal. Part of the runaway electron beam goes to the development of electrostatic instabilities in the discharge, which give rise to the occurrence of the electromagnetic radiation. The radiation was found to

ACCESSION NR: AT4036051

be coherent in the entire range of investigated initial gas pressures, with an intensity which is constant practically along the entire discharge length. The frequency of the electromagnetic radiation was found to be close to the plasma frequency and the power to exceed appreciably the power of thermal radiation from the plasma. The transformation of the longitudinal electrostatic oscillations into transverse electromagnetic waves can be attributed to the nonlinearity of the oscillations in the plasma due to the large amplitude, and also to boundary effects on the surface of the plasma pinch. Orig. art. has: 5 figures and 3 formulas.

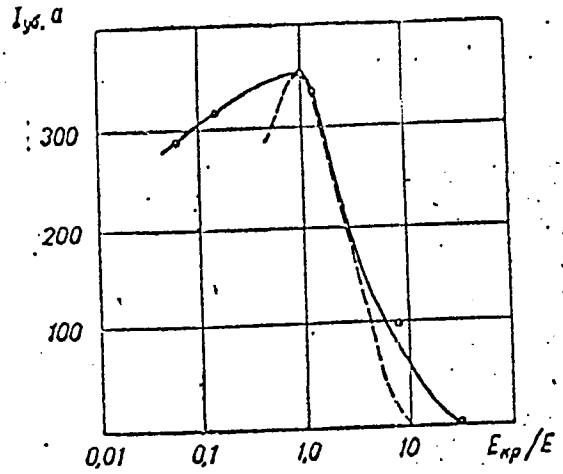
ASSOCIATION: None

SUBMITTED: 00	DATE ACQ: 21May64	ENCL: 03
SUB CODE: ME	NR REF SOV: 006	OTHER: 003

Card 3/6

ACCESSION NR: AT4036051

ENCLOSURE: 01

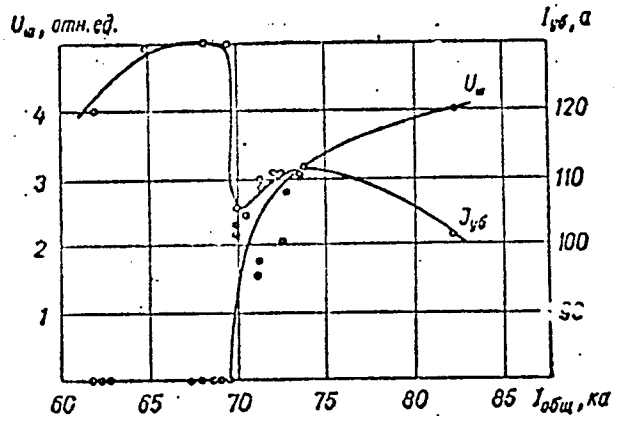


Dependence of runaway electron current on the critical field at constant electric field in a plasma, E = 400 V/m

Card 4/6

ACCESSION NR: AT4036051 ENCLOSURE: 02

Plasma rad. rel. un.



Runaway elect.

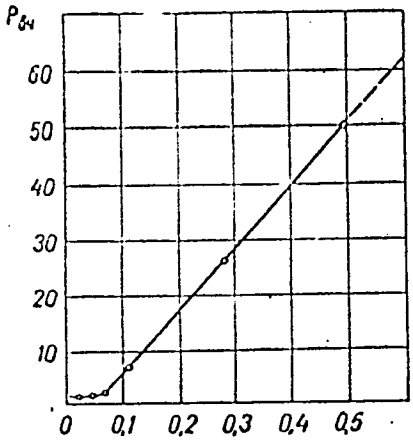
Tot. cur.

Dependence of plasma radiation and of runaway electron current on the total current in the discharge, at hydrogen pressure $p = 2.6$ n/m^2 and magnetic field $H_i = 0.6$ Tesla

Card 5/6

ACCESSION NR: AT4036051

ENCLOSURE: 03



Dependence of hf oscillation power at the receiver on the frequency

Card 6/6

ACCESSION NR: AP4043982 S/0089/64/017/002/0083/0088

AUTHOR: Suprunenko, V. A.; Sukhomlin, Ye. A.; Reva, N. I.

TITLE: Ohmic heating and electrical conductivity of plasma in strong electric fields

SOURCE: Atomnaya energiya, v. 17, No. 2, 1964, 83-88

TOPIC TAGS: ohmic plasma heating, plasma electrical conductivity, plasma, strong magnetic field, electrostatic plasma instability

ABSTRACT: The authors have experimentally investigated in detail the conditions of excitation of electrostatic instabilites in a quasistationary discharge in a strong magnetic field, and their effect on the electroconductivity and heating of the plasma. The discharge currents reached 100 kamp. and the period 9 μ. sec. (the details of the experimental arrangement were described by V. A. Sy*pruchenko et al in Atomnaya Energiya 14, 349, 1961). Hydrogen and helium were used as discharge gases. The resistance of the discharge, the current produced by the "running away" electrons, microwave radiation of the plasma, and the elec-

Card 1/2

ACCESSION NR: AP4043982

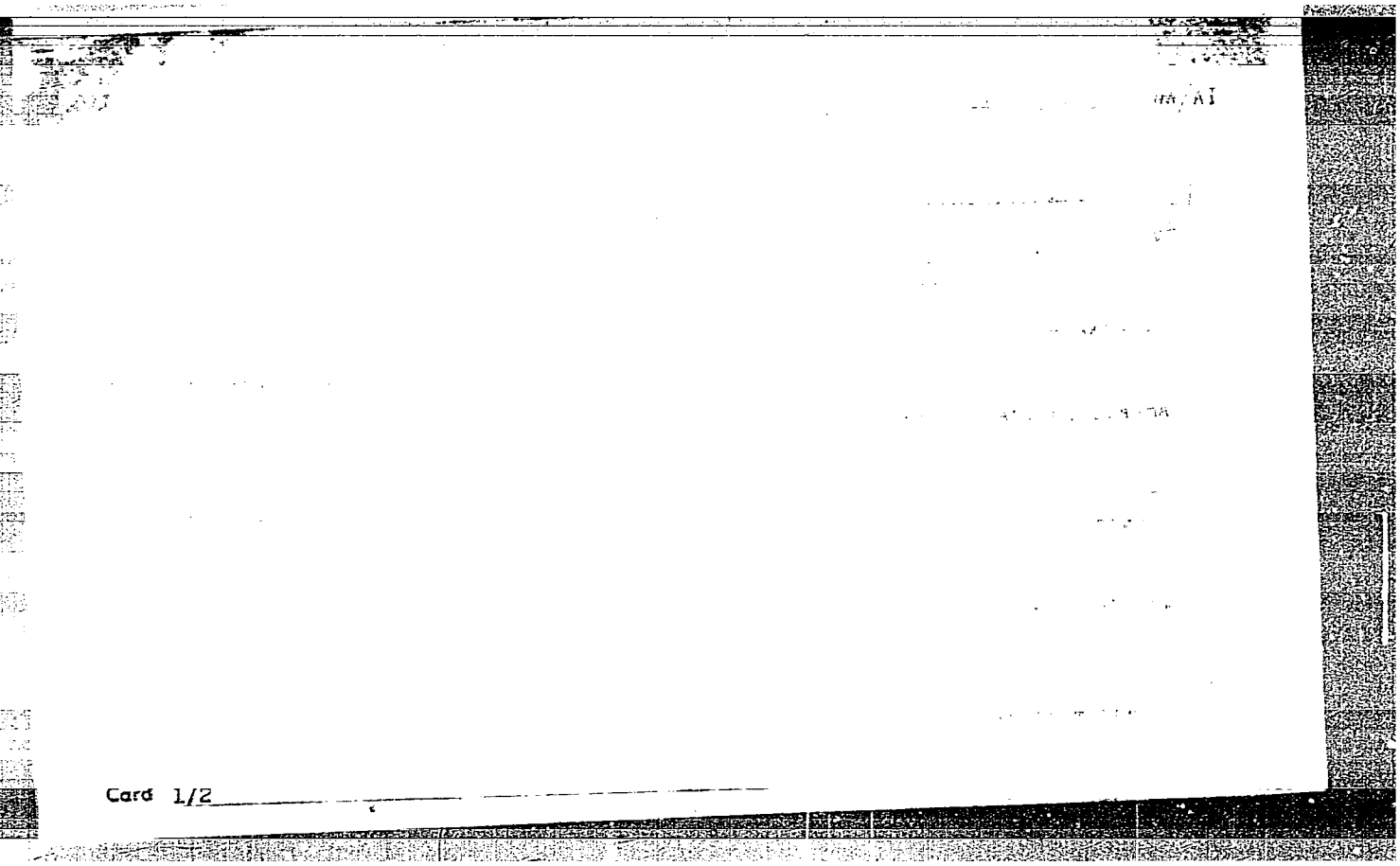
tron temperature in the center of the discharge filament were measured. The density of the charged particles were determined by the stark effect broadening of the hydrogen-like lines. The authors found that at small electric fields, the resistance of the plasma is proportional to the square of the electric field, and after reaching the critical value of the field, increases rapidly. This critical field is proportional to the plasma density, inversely proportional to the electron temperature, and is independent of the nature of gas. "The authors are grateful to K. D. Smel'nikov and Ga. B. Fainberg for interest and constant help, and to O. S. Pavlichenk for help with the spectral measurements." Orig. art. has: 6 figures.

ASSOCIATION: None

SUBMITTED: 19Nov63 ENCL: 00

SUB CODE: EM, ME NO. REF. SOV: 013 OTHER: 007

Card 2/2



Card 1/2

L 52161-65
ACCESSION NR: AP5014202

Measurements of the absolute values of the x-ray radiation intensity make [illegible] walls of the chamber.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Physico-Technical Institute, Academy of Sciences, Ukrainian SSR)

SUB CODE: NP

L 28423-66 EPF(n)-2/EWT(1)/EWT(m)/ETC(f)/ENG(m) IJP(c) AT

ACC NR: AP6013116 SOURCE CODE: UR/0057/66/036/004/0620/0626

AUTHOR: Aleksin,V.F.; Suprunenko,V.A.; Sukhomlin,Ye.A.; Reva, N.I.

ORG: none

TITLE: Measurement of the electron temperature of a plasma with the aid of soft x-ray bremsstrahlung

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no.4, 1966, 620-626

TOPIC TAGS: plasma diagnostics, electron temperature, x ray technique x ray absorption bremsstrahlung, electron density

ABSTRACT: The authors discuss the determination of the electron temperature of a plasma by measuring the absorption curves of the soft x-ray bremsstrahlung from targets located within the plasma. The work was undertaken because difficulties were encountered in determining plasma electron temperatures from the bremsstrahlung emitted by the plasma itself, owing to the large effect of small high atomic weight impurities. Moreover, by the use of a target it is possible under favorable conditions to measure both electron temperatures and densities in different parts of the plasma. The calculations necessary to convert the x-ray absorption curves to electron temperatures are performed, using density and absorption formulas in the monograph literature, and the principal results are tabulated. The proper selection of target and absorber

Card 1/2 UDC: 533.9.07

L 28491-66

ACC NR: AP6013116

materials is discussed; the significant factor is the location in the spectrum of characteristic radiations and absorption edges. To test the proposed technique, the authors measured the electron temperature in a magnetic field-stabilized linear hydrogen gas discharge in the apparatus described elsewhere by three of them (Atomnaya energiya, 17, 83, 1964). A 40 micron beryllium foil target was employed with beryllium and aluminum absorbers. The target was mounted in a short collimating side tube to protect it from fast electrons accelerated in the discharge field and from hard x rays from the electrodes. The x rays were detected with a scintillator, and the output from the photomultiplier was displayed on an oscilloscope. The x ray intensity decreased greatly when the beryllium target was replaced by a polyethylene film, indicating that the x rays came from the target and not from the plasma itself. The electron temperature was determined by comparing the observed absorption curves with calculated curves for different temperatures. The shapes of the observed and calculated curves were in good agreement, indicating that the electron distribution was close to Maxwellian. Both absorption curves gave the same electron temperature of slightly below 3 keV. The authors thank Academician K.D.Sinel'nikov of the AN UkrSSR for valuable discussions...Orig. art. has: 12 formulas, 7 figures, and 2 tables.

SUB CODE: 20 SUBM DATE: 25Dec64 ORIG. REF: 006 OTH REF: 007

Card 2/2

SUKHOMLINA, A.N.

Amount of vitamin C in vegetable dishes served in a students' dining hall. Trudy LSGMI 45:37-41 '58 (MIRA 11:11)

1. Kafedra gigiyeny pitaniya Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - dots. Z.M. Agranovskiy).
(ASCORBIC ACID)
(VEGETABLES--ANALYSIS)

IL'ITSKIY, R.B.; SUKHOMLINA, A.N.

Experience in sanitary supervision of enterprises using thickness gauges with radioactive sources. Gig. i san. 28 no.6:71-74 Je '63 (MIRA 17:4)

1. Iz Zaporozhskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.

SOKOLOVSKIY, P.I.; ARONE, R.G.; SUKHOMLINA, A.P.; SAMARYANOVA, A.M.

Thermally strengthened low-alloy grade 09G2 and 14G2 steel for metal elements. Prom.stroi. 40 no.11:58-61 '62. (MIRA 15:12)

(Steel, Structural)

L 13051-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) JD

ACC NR: AP5027912 SOURCE CODE: UR/0133/65/000/011/1036/1039

AUTHOR: Kazarnovskiy, D. S. (Doctor of technical sciences); Dryapik, Ye. P. (Engineer); Legeyda, N. F. (Engineer); Zakharov, A. Ye. (Engineer); Balon, V. I. (Engineer); Vol'ter, Ye. V. (Engineer); Nosov, V. S. (Engineer); Konstantinova, T. A. (Engineer); Sukhomlina, A. P. (Engineer)

ORG: Ukrainskiy n.-i. Institute of Metals (Ukrainskiy n.-i. institut metallov); Kommunarskiy Metallurgical Plant (Kommunarskiy metallurgicheskiy zavod)

TITLE: Strengthening of low carbon semikilled St. 3ps steel by heat treatment

SOURCE: Stal', no. 11, 1965, 1036-1039

TOPIC TAGS: carbon steel, low carbon steel, heat treating furnace

ABSTRACT: A heat treatment was developed for St. 3ps steel plates of 12 and 25 mm thickness by heating in a furnace to the temperature range 890-920°C and water cooling on a quench press. This treatment resulted in an average strengthening of 20% and a satisfactory plasticity level. Three separate heats of steel were heat treated. The compositions ranged as follows: C--0.16-0.19%; Mn--0.46-0.52%; Si--0.08-0.12%; S--0.036-0.042%; Ps--0.012-0.034% and Cu--0.050-0.058%. The details of the process were described. The steel plates were heated in a roller type furnace to temperature for a holding time of 1.5 min/mm. Cooling was done in a quench press with a water flow

UDC: 621.78

Card 1/2

L 13051-66
ACC NR: AP5027912

rate of 1700 m^3/hr. After quenching, some warpage could be noted, particularly in thicknesses up to 20 mm. Mechanical properties of the heat treated plate in flat and round specimens were determined. Yield strength, ultimate strength, % elongation, % reduction in area and impact resistance were tabulated for heat I (12 mm thick), heat II (12 and 25 mm thick) and heat III (25 mm thick). Frequency curves were plotted for the mechanical properties of the heat treated plate (frequency of occurrence as a function of strength, ductility and impact resistance) and average values were given for these properties. The effect of tempering after quenching was also noted. In general, the strength decreased slightly and the ductility increased. Tempering had little effect on impact resistance. Microstructures showed that the structures after quenching were predominantly pearlitic-ferritic, with needle-like ferrite distributed along grain boundaries for the 12 mm thick plates while in the 25 mm thick plates there was smaller grained, needle-like ferrite. The highest strengths and lowest ductility were obtained in the 12 mm plate. However, the mechanical properties obtained never fell below the following levels for the heat treated condition: yield stress--30 kg/mm^2, ultimate strength--44 kg/mm^2, % elongation--16, and impact strength (at -40°C)--3 kgm/cm^2. It was recommended that low carbon steel plate, strengthened by the above treatment, be used in place of low alloyed steel. To be effective the optimum carbon content for heat treatment should be 0.12-0.18%. Orig. art. has: 3 figures, 2 tables.

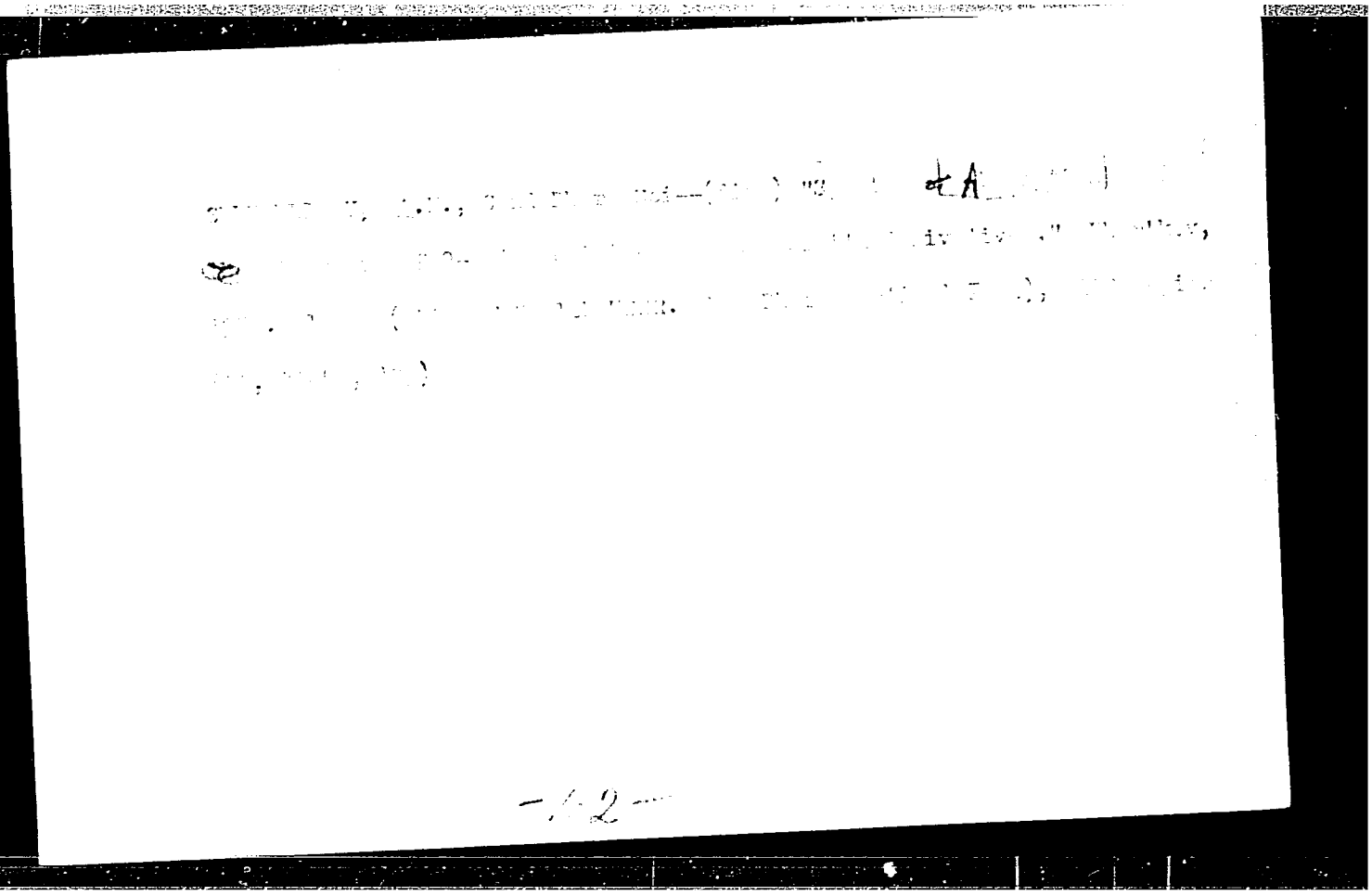
SUB CODE: 11/ SUBM DATE: 00/ ORIG REF: 004/ OTH REF: 000

Card 2/2

SUKHOMLINA, Z.I.; VITVITSKIY, M. [Vitvits'kyi, M.], red.; DOROSHENKO, M., red.; NEDOVIZ, S., tekhn. red.

[Useful advice] Knyzhkovo-zhurnal'ne vyd-vo, 1961. 182 p. (MIRA 14:10)

(Cookery) (House furnishings)



79-28-4-41/60

AUTHOR: Sukhomlinov, A. K.

TITLE: On the Tautomerism of 9-Aminoacridine (O tautomerii 9-amino-akridina)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 4, pp. 1038-1045 (USSR)

ABSTRACT: By spectrographic investigations of 2- and 4-aminopyridine (Ref 1) 2- and 4-hydroxypyridine (Ref 2), and 2- and 4-methyl-pyridine (Ref 3) in the ultraviolet range was shown that at these compounds in the absorption spectrum does not occur tautomerism. As to the spectral investigations of the 9-amino-acridine, the published data showed up contradictions (Refs 4 - 7, 11, 12). In this article the absorption spectra of 9-aminoacridine and 10-methyl-9-iminoacridine in the ultra-violet range are investigated. The influence of solvents and of acids on the absorption spectra of these compounds was ascertained. The spectra of the 9-aminoacridine in organic solvents are marked by 2 very intensive absorption bands: The "benzene band" at 4400 - 3200 Å and a second band at 2800 - 2400 Å. The position of the absorption spectra is similar to the one of the absorption spectra of acridine,

Card /4

On the Tautomerism of 9-Aminoacridine

only a bit shifted towards the visible range. The spectrum of the 9-aminoacridine in organic solvents can be regarded as a complicated "benzene aminopyridine" absorption spectrum, which the "pyridine band" and the "p-aminopyridine band" are not clearly marked.

At the investigation of the influence of acids turned out that the "benzene-aminopyridine" spectrum of the 9-amino-acridine is almost unchanged on occasion of formation of salts at the ring nitrogen. The absorption spectrum in concentrated sulfuric acid resembles the spectrum of the unsubstituted acridine in the same acid. This indicates that in discrepancy with published data (Ref 13) also at the amino group salt formation takes place. A bivalent 9-amino-acridinium cation forms.

The absorption spectrum of the 10-methyl-9-iminoacridine in anhydrous hexane, ether, and dioxane has nothing common with the spectra of the 9 aminoacridine and 9-dimethylamino-acridine in the same solvents. A comparison with p-benzo-quinone showed that the spectra of this compound and of the 10 methyl-9 iminoacridine are similar. The spectrum of the 10-methyl 9-iminoacridine turned out to be composed: The

On the Tautomerism of 9-Aminoacridine

"imino quinone (quinoimine ?) spectrum" is superposed by "benzene bands". Under the influence of polar solvents and also in acid solutions the spectrum of the 10-methyl-9-iminoacridine changes much and becomes similar the absorption spectrum of the 9-aminoacridine in ethanol of hydrochloric acid. This indicates that on occasion of the salt formation of 10-methyl-9-iminoacridine and 9-aminoacridine an acridinium ion of the same structure is formed. It stated that in case of 9-aminoacridine in ethyl alcoholic - hydrochloric acid solution the salt formation takes place by absorption of a proton at the ring nitrogen, while the corresponding salt formation in case of 10-methyl-9-iminoacridine takes place at the nitrogen outside the ring.
At the absorption spectrum in the ultraviolet range was found out that the 9-aminoacridine has no tautomerism. The measuring results are quoted exactly; the research works took place under the direction of V. I. Bliznyukov. There are 3 figures and 25 references, 15 of which are Soviet.

79-28-4-41/60

On the Tautomerism of 9-Aminoacridine

ASSOCIATION: Kharkovskiy farmatsevticheskiy institut
(Khar kov Pharmaceutical Institute)

SUBMITTED: November 29 1956

Card 4/4

79-28-5-25/69

AUTHORS: Bliznyakov, V. [illegible] Sukhomlinov, A. K.

TITLE: Absorption Spectra and Structure of Acridine (Spektry pogloshcheniya i stroyeniye akridina)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 5, pp. 1247-1249 (USSR)

ABSTRACT: The authors repeated the spectrographic pictures of earlier scientists (references 1 - 4), however, in other solvents in ethanol, dioxane, tetrachloromethane, dichloroethane, in the ethanol solution of hydrogen chloride of different concentration, in concentrated 98% sulfuric acid and in 60% perchloric acid. Thanks to the influence of the condensed benzene ring, the absorption spectrum of acridine is strongly displaced in direction to the longer waves, compared to the quinoline spectrum. Besides an increase of the intensity of the long-wave bands by 3.5 fold takes place in the spectrum of acridine. Due to this fact the "pyridine band" of acridine is partly covered by the "longwave benzene band" and appears only unclearly in the spectrum of the dioxane-

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and hexane solution of acridine (figure 1). The "pyridine band" of acridine appears clearly in the spectrum of hydrogen-chloride-acidous 9-aminoacridine (figure 1, curve 7). In the formation of acridine salts a deeply colored displacement of the longwave band limit of acridine occurs, which is not the case with short-wave ones. The spectrographical investigations characterize the weakening of the aromatic character of the pyridine ring of acridine in the formation of salt and acinide with those of the oxidation (references 7, 8). Acridine thus yields a complicated ultraviolet spectrum in organic solvents in which spectrum the present bands characterize the pyridine (quinoline) and benzol ring. The mutual influence of these rings shows up in the increase of intensity as well as in the displacement of the corresponding absorption bands in the direction to the longer waves. The absorption spectrum of the acridinium ion in acidous solutions is understood to be a complex spectrum and consists of benzene bands of "anthracene" and the benzene bands of the "ortho-type" which mutually cover each other. There are 2 figures and

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8 references, 2 of which are Soviet.

ASSOCIATION: Khar'kovskiy farmatsevticheskiy institut
(Khar'kov Pharmaceutical Institute)

SUBMITTED: November 29, 1956

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AUTHORS: Bliznyukov, V. I., Sukhomlinov, A. K. SOV/79-28-6-39/63

TITLE: The Absorption Spectra and the Structure of the Bisulfite Compound of Acridine (Spektry pogloshcheniya i stroyeniye bisul'fitnogo soyedineniya akridina)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1610-1613 (USSR)

ABSTRACT: Data in papers concerning the structure of the bisulfite compounds of acridine are full of contradictions. Graebe (Ref 1) (Grebe) was the first to describe two products of the conversion of acridine with sulfurous acid and with sodium bisulfite. The one of them, $C_{13}H_9NSO_3HNa$, consisted of colorless crystals which easily dissolved in water, the other, was red and a compound difficult to dissolve: $C_{13}H_{10}NSO_3H \cdot C_{13}H_9N$. Later on Wirth and Lemstedt (Wirt, Lemshtedt) (Ref 2) attributed the structure of the sodium salt of acridane-9-sulfo acid (formula I) to the colorless product. Drozdov and Cherntsov (Ref 3) took the colorless product of acridine to be a sulfurous acid salt of sodium and acridinium (II) (see scheme). Grigorovskiy (Ref 4) regards both formulae of

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the structure as not sufficiently proved. In order to find which of the two structural formulae of the colorless bisulfite compound of acridine, (I) or(II), is the correct one, the absorption spectra of this product can be compared to those of acridine derivatives having a pyridine ring of quinoid structure, e.g. to those of dihydroacridine, 10-methyl-9-imino-acridine. By this method and by the additional comparison with the acridinium ion it could be possible to decide in favor of one or the other formula. Concluding the authors found that in the absorption spectra of the bisulfite compound of acridine in sodium sulfite solution, as well as in ethanol and aqueous solutions, a quinone absorption band occurs immediately after the production of the solution. After 6-days storing of the aqueous solutions this quinone band disappears and a return to the spectrum of the acridine ion takes place. It was explained that the structure of the colorless bisulfite compound of acridine of the empiric formula, $C_{13}H_{10}O_3NSNa \cdot 2H_2O$, represents a sodium salt of acridane-9-sulfo acid, which on the action of water converts to the sulfurous acid salt (at the nitrogen ring) (I). There are 2 figures and 8 references, 2 of which are

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The Absorption Spectra and the Structure of the Bisulfite Compound of Acridine

Soviet.

ASSOCIATION: Khar'kovskiy farmatsevticheskiy institut (Khar'kov Pharmaceutical Institute)

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1. Acridines--Spectrographic analysis 2 Metalorganic compounds --Spectra

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in various solutions are shown (Fig 1), and in concentrated sulfuric acid (Fig 2). Concluding the authors investigated the influence of the solvents as well as of acid solutions on the absorption spectra of the mentioned acridine, and showed that the ring nitrogen is capable of attracting the electrons under the influence of substituting groups as well as to emit them. The composed spectrum of 2-methoxy-9-aminoacridine was recognized as "benzene-pyridine" spectrum of acridine on which three absorption bands are located corresponding to the separation conversion of the substituting groups with ring nitrogen through the π-electron system of the acridine ring. The authors found that in concentrated sulfuric acid a double acid salt forms at the ring nitrogen and at the amino group of 2-methoxy-9-aminoacridine. There are 2 figures and 5 references, 5 of which are Soviet.

ASSOCIATION: Khar'kovskiy farmatsevticheskiy institut (Khar'kov Pharmaceutical Institute)

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The Absorption Spectra and the Structure of 2-Methoxy- SOV/79-28-6-40/63
-9-Aminoacridine

1. Acridines--Spectrographic analysis

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Absorption Spectra and the Structure of Acyl Derivatives of 9-Aminoacridine

rest corresponded, with respect to their melting points, to the data to be found in relevant publications (Refs 1,6). The ultraviolet absorption spectra were investigated in hexane, dioxan, ethanol, chloroform, and dichloroethane, in ethanol solutions of HCl, and in 60% chloric acid. A comparison of the absorption curves of 9 aminoacridine, its acyl derivatives, and acridine in dioxan as well as in other solvents (Fig 1, Curves 1-3; Fig 2, Curves 1-4) shows that the replacement of the hydrogen of the amino group by the acid residue causes the long-wave band to shift toward the shorter waves. In the salt formation, e.g. in the case of the ethanol solutions of HCl, the absorption spectrum of 9-monoacetylaminoacridine shifts toward the long waves (Fig 3, Curves 1,4, Comparison with 5), and resembles the spectrum of the acrisinium ion. The absence of the "quinone-imine absorption band" in the spectra of the mono- and diacetyl derivatives of 9-aminoacridine in neutral solutions, and, on the other hand, the presence of the "pyridine absorption band" in acid solutions show that the mono- and diacetyl derivatives should be considered derivatives of the amino form. There are 4 figures and 9 references, 7 of which are Soviet.

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