"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, A.V.

Experience in the use of glass pipes. Ferm. i spirt. prom. 30 no.7:18-19 '64 (MIRA 18:2)

1. Nauchno-issledovatel'skiy institut Soveta narodnogo khozyaystva SSSR.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, A.V., inzh.

Efficient use of potentialities in glass fiber producing plants. Stek. i ker. 22 no.11:19-21 N '65. (MIRA 18:11)

1. Nauchno-issledovatel'skiy institut organizatsii upravleniya i normativov.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, A.YA.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, B., inzh.-polkovnik v otstavke

Scout and sentinel. Voen. znan. 38 no.6:22-23 Je '62. (MIRA 15:6)
(Radar, Military)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZELINSKIY, Vyacheslav Mikhaylovich, kand. tekhn. nauk; SLOBODKIN, Dmitriy Savvich, kand. tekhn. nauk; TARAN, Arseniy Grigor'yevich, inzh.; TVERDOKHLEBOV, Ivan Panteleyevich, inzh.; ZHUK, Boris Vasil'yevich, inzh.; BEBENIN, M.Ye., inzh., retsenzent; CHUMACHENKO, T.I., red.izd-va; BEREZOVYY, V.N., tekhn. red.

[Control of mine waters] Bor'ba s shakhtnymi vodami. [By] V.M.Zelinskii i dr. Kiev, Gostekhizdat USSR, 1963. 360 p. (MIRA 17:3)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

CHEL'TSOV, Mikhail Ivanovich; SLOBOIKIN, Dmitriy Savvich; FADEYEV, Yevgeniy Ivanovich; SKIRGELLO, Ol'gerd Boleslavovich; POLYAK, Aron L'vovich; ZHUK, Boris Vasil'yevich; POLYAKOV, Nikolay Mikhaylovich; NIKOLAYENKO, Aleksey Timofeyevich; FAYNBERG, Grigoriy Solomonovich; YUDITSKIY, Grigoriy Izrailevich; DOROSHENKO, Grigoriy Nesterovich; TRUPAK, N.G., prof., doktor tekhn. nauk, obshchiy red.; SMIRNOV, L.V., red.izd-va; KONDRAT'YEVA, M.A., tekhn.red.

[Handbook on special methods of shaft sinking] Spravochnik po prokhodke stvolov shakht spetsial'nymi sposobami. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 383 p. (MIRA 13:4)

(Shaft sinking)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, D., Col

Author of article "Vigilance: The Soldier's Weapon," urging all military personnel to be vigilant at all times, and demonstrating the vigilance of Soviet soldiers through examples of actual events. The author stated that a foreign plane was observed crossing the Soviet Union's borders, and that an alarm was given, sending two pilots, KAMYSHENKOV and STRUGOV, aloft to intercept it. ZHUK also mentioned the interception of a foreign craft in Soviet territorial waters by Picket Boat (storozhevoy kater) Commander (Capt 3d Rank, Border Troops) KROTOV*, and the capture near an airfield of a German who was working for a foreign intelligence organization. Sovetskaya Armiya, Group of Soviet Forces, Germany, 23 Jul 54

SO: SUM 291, 2 Dec 1954

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, D.A.

Chair of Surgical Stomatology, Moscow Stomatological Inst

On the effe t of painful stimuli on the electrical sensitivity of the eye

So: Fiziologicheskiy Zhurnal Vol 30, No 5. 1941

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

ca

24

COMMON ELEMENTS

MATERIALS INDEX

Dyeing furs, feathers, etc. V. V. Kozlov and [illegible] Zhuk. Russ. 50,168, December 31, 1939. The dyeing is effected with 1,3-, 1,7-, 1,8-, and(or) 2,3-dihydroxynaphthalenes or their mixts., p-$C_6H_4(NH_2)_2$, p-$H_2NC_6H_4OH$, 1,4-$C_{10}H_6(NH_2)_2$, etc., in the presence of an oxidizing agent, e. g., H_2O_2.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

24

Dyeing furs, feathers, etc. V. V. Koslov and [illegible] Zhuk. Russ. 56,109, Dec. 31, 1939. Black colors obtained by oxidation of a mixt. of 2,6- or 2,7-dihydroxynaphthalene and p-phenylenediamine, e. g., with H_2O_2.

CHEMICAL ELEMENTS

MATERIALS INDEX

OPEN

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

25

Naphthalene derivatives as oxidation dyes for furs. V. V. Korlov and D. S. Zhuk. *J. Applied Chem.* (U. S. S. R.) 12, 1501-12(in French, 1513)(1939).—The ability of the dihydroxynaphthalenes to dye furs decreases in the order 1,2-, 1,4-, 1,5-, 1,7-, 1,3-, 2,6-, 2,7-, 1,6-, 1,8-. The procedure is described in detail. 1,2-, 1,4-, 1,5- and 1,8-Naphthylenediamines and 1,2- and 1,4-aminonaphthols also were studied. Richer colors are obtained with these diamines than with those of the benzene series. Combinations of these dyes in fur dyeing are also discussed. Dihydroxynaphthalenes can be combined with other oxidation dyes of the naphthalene series as well as of the benzene series. The fastness of the dye on the furs is not inferior, and in some instances it is superior, to that obtained from benzene derivs. 22 references. A. A. E.

METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

10

The synthesis and new applications of dihydroxynaphthalenes. V. V. Kozlov and D. S. Zhuk. *Trudy Moskov. Khim.-Tekh. Inst. Mendeleeva* 1940, No. 7, 3-48; *Khim. Referat. Zhur.* 4, No. 9, 123(1941).—A gp. of hydroxynaphthalenes were obtained by basic fusion of hydroxy- or disulfonic acids. Fusing 1,3-naphtholsulfonic acid with KOH at 250-60° formed 1,3-dihydroxynaphthalene (yield 25-30%). Addn. of hydrosulfite increased the yield to 47%. Some isomeric dihydroxynaphthalenes (1,8, 1,7, 2,3 and 1,3) yielded stable colors for furs (especially black color) on applying certain mordants and in mixts. with other oxidizing dyes. The colors were considerably more stable than those of ordinary dyes of the benzene series. The 1,8-, 2,6-, and 2,7-isomers can intensify the color in a mixt. with other oxidizing dyes. Dihydroxynaphthalenes can be used for the synthesis of valuable brown varnishes used in polygraphy. W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

MOSHONKIN, Nikolay Petrovich; ZHUK, David Stepanovich; SAYECHNIKOV, Vitaliy Grigor'yevich; GRYZLOV, N.N., red.

["Komilesprom" machine units based on the MAZ and ZIL motor vehicles] Agregatnye mashiny "Komilesprom" na baze avtomobilei MAZ i ZIL. Moskva, Izd-vo "Lesnaia promyshlennost'," 1964. 101 p. (MIRA 17:8)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, D.S.; GEMBITSKIY, P.A.; KARGIN, V.A.

Advances of polyethylenimine chemistry. Usp. khim. 34 no.7: 1249-1271 Jl '65. (MIRA 18:7)

1. Institut neftekhimicheskogo sintesa AN SSSR.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, D.S.; KEPPEN, V.A.; POKATILO, N.A.

Interaction between cyclohexene and concentrated nitric acid. Dokl. AN SSSR 136 no.2:346-349 '61. (MIRA 14:1)

1. Institut neftekhimicheskogo sinteza Akademii nauk SSSR. Predstavleno akademikom A.V. Topchiyevym.
(Cyclohexene) (Nitric acid)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

89614

S/020/61/136/002/019/034
B016/B060

5.3610

AUTHORS: Zhuk, D. S., Keppen, V. A., and Pokatilo, N. A.

TITLE: Interaction of Cyclohexene With Concentrated Nitric Acid

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 2, pp. 346-349

TEXT: In contrast with earlier papers (Refs. 1-6, 8-10) which have reported on the nitration of cyclohexene with diluted HNO_3 or with nitrogen oxides in the liquid phase, the authors have used 98.5 to 99.7% HNO_3 in the vapor phase. Its amount related to cylcohexene (5.2 : 1) was calculated in a way as to ensure a complete oxidation (combustion) of the latter. The reaction was performed at atmospheric pressure and 100°C in a quartz tube during a contact time of 6.5 sec. (occasionally 1.63 sec.). A complicated mixture of products found to form in this connection contained nitro-, nitroso-, nitrate-, hydroxyl-, carbonyl-, and carboxyl groups in various combinations. Also the formation of cyclohexene nitro nitrite (in accordance with Ref. 5) is said to be possible. It can be subjected to

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89614

Interaction of Cyclohexene With Concentrated Nitric Acid

S/020/61/136/002/019/034
B016/B060

hydrolysis and give rise to nitro cyclohexanol. The following substances were separated and identified: cyclohexene pseudonitrosite; nitro cyclohexanone; 1-nitrocyclohexene; keto cyclohexyl nitrate; nitro cyclohexyl nitrate; dinitro cyclohexane; 1,2-cyclohexanedione; a compound with the empirical formula $C_6H_{10}O_2$; 2-nitro cyclohexanol; 1,2-cyclo hexanedione mononitrate, adipic, oxalic, and succinic acid. It was found that in those cases where a cis- trans-isomerism is possible in the compounds synthesized, a mixture of isomers with prevailing trans-form results as a rule. It was concluded that the oxidation processes play a major part in the complicated reaction mentioned. Above all, their study will contribute to understand the self-inflammation process of cyclohexene with concentrated HNO_3. A report will be made on respective studies in a separate paper.

N. A. Chumayevskiy is thanked for having performed the spectroscopic analysis of the compounds synthesized. There are 10 references: 1 Soviet, 4 US, 2 German, and 3 British.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences USSR)

Card 2/3

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

89614

Interaction of Cyclohexene With Concentrated Nitric Acid

S/020/61/136/002/019/034
B016/B060

PRESENTED: July 21, 1960, by A. V. Topchiyev, Academician

SUBMITTED: July 12, 1960

Card 3/3

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

USSR.

[illegible]

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, E. A.

Peat industry of the Belorussian SSR in 2nd Five-Year Plan. Minsk, Dzierzhaunae navukova-tekhnichnae vydavetstva, 1933. 70 p.

TN840.W525

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

PROCESSES AND PROPERTIES INDEX

S 21

A VIBRATION-INTERRUPTED ARC. E. M. Zhuk. (Zavodskaya Laboratoriya, 1948, vol. 14, July, pp. 877-878). (In Russian). A description is given of a vibration make-and-break device for use in producing an interrupted arc, and a unit for the production of this type of arc, which has given satisfactory service for industrial spectroscopy , is illustrated. S.K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

EXCERPTA MEDICA Sec 9 Vol 13/9 Surgery Sept. 60

5175. EVALUATION OF THE OPERATION OF SUTURE OF PERFORATING ULCERS OF THE STOMACH AND DUODENUM (Russian text) - Zhuk F. A. - NOV. KHIR. ARKH. 1957, 2 (33-37)

In the pre-war period good or satisfactory results were obtained in 80-90% of cases with simple suture. During the war and the immediate post-war period the clinical course of the illness was noticed to become more severe and consequently the indications for gastric resection widened, but the results were not always good. Between 1945 and 1952, 140 males and 10 females were operated on for perforated ulcer; perforation of the stomach occurred in 88.5% of cases and of the duodenum in 11.5%. In all patients the ulcer was found on the anterior wall of the stomach or the duodenum. The majority of patients were 30 to 50 yr. of age. In all the patients the perforation was sutured and in 33 of them in addition a posterior gastro-enterostomy was carried out. Long-term results were assessed in 102 patients who remained under observation from 1-9 yr. A careful investigation revealed: cure of ulceration occurred in 55 cases (33.94%), satisfactory long-term results in 25 cases (24.51%) (all these patients were fully employable) and unsatisfactory results, i.e. recurrence of ulceration, in 22 cases (21.55%). Of these latter, 12 (12.2%) underwent a further operation. It is concluded that for each patient the choice of operation has to be made on the individual circumstances of the case. (S)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, F.A. (Kiyev, ul. 9 Yanvarya, d.1)

Evaluating closure as a technic in perforating gastric and duodenal ulcers. Nov.khir.arkh. no.2:33-37 Mr-Ap '57. (MLRA 10:8)

1. Kafedra khirurgii (zav. - prof. I.I.Kal'chenko) Kiyevskogo instituta usovershenstvovaniya vrachey
(PEPTIC ULCER) (STOMACH--SURGERY)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ACCESSION NR: AP4010878 S/0210/63/000/011/0106/0113

AUTHORS: Poplavskaya, L. N.; Volkova, L. F.; Zhuk, F. D.

TITLE: Seismicity of the Far East for 1961

SOURCE: Geologiya i geofizika, no. 11, 1963, 106-113

TOPIC TAGS: seismicity, Far East, epicenter, deep focus, earthquake, deep focus earthquake

ABSTRACT: This paper is a summary of instrumental and macroseismic data for earthquakes in the Far East during 1961. Epicenters were located by the methods considered most effective for that region: 1 - average lines, 2 - equal distances from stations, 3 - intersections for t_p, and 4 - master curves for isochrons of t_p and S-P. The first was most commonly used in combination with the third. The accuracy of locating epicenters was generally within 20-25 km. The epicenter of deep-focus earthquakes was easily located by one of the above methods. The depth of focus was generally found by difference in the S-P and sP-P phases, but difficulties were encountered because, firstly, the S-P travel-time curves for the depth 20-50 km within the epicentral interval 1.5-15° were difficult to distinguish and,

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ACCESSION NR: AP4010878

secondly, the separation of the sP phase on seismograms of Kurile-Kamchatka earthquakes was frequently impossible. Depth was therefore generally determined by data from near (up to 100 km) and distant (over 1500 km) stations. During the indicated period (1961), 6 earthquakes of group II were recorded ($7\frac{1}{2} > M \geqslant 6\frac{1}{2}$), 18 of group III ($6\frac{1}{2} > M \geqslant 5\frac{1}{4}$), 86 of group IV ($5\frac{1}{4} > M \geqslant 4\frac{1}{4}$), and 132 of group V ($M \leqslant 4$). Seismicity for 1961 in the Kamchatka region was considerably lower than in preceding years. All earthquakes with a scale reading greater than 5 are shown in a table. The two largest were: 1 - the earthquake of 12 February, with M = 7, on the island of Shikotan; 80 aftershocks with $3\frac{1}{2} \leqslant M \leqslant 6$ were recorded within 21 hours after the main shock; and 2 - the earthquake of 11 August, 50 km south of Nemuro, with M = 6 3/4. "The authors are deeply grateful to R. Z. Tarakanov and S. L. Solov'yev for valuable suggestions during preparation of this paper." Orig. art. has: 6 figures, 4 tables, and 2 formulas.

ASSOCIATION: Sakhalinskiy kompleksnyy nauchno-issledovatel'skiy institut Sibirskogo otdeleniya AN SSSR, pos. Novo-Aleksandrovsk (Sakhalin Joint Scientific Research Institute of the Siberian Department AN SSSR)

SUBMITTED: 11Dec62 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: AS NO REF SOV: 009 OTHER: 002

Card 2/2

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

1. ZHUK, F.S.

2. USSR (600)

4. Forestry Schools and Education

7. House of Forestry Propaganda of the Belaya TSerkov' Forest Administration. Les i step' 4 no.12 1952

9. Monthly List of Russian Accessions. Library of Congress. March 1953. Unclassified.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

KHAZAN, G. L., kand. med. nauk; GONCHAROVA, N. N., kand. med. nauk; KARAMYSHEV, V. B., mladshiy nauchnyy sotrudnik; VYCHEGZHANIN, A. G., mladshiy nauchnyy sotrudnik; OVCHARENKO, O. I., kand. med. nauk; ZHUK, G. S., kand. med. nauk (Khar'kov)

Bacterial diffusion in the atmosphere of machine shops and ways of decreasing it by the ultraviolet irradiation of the recirculated air. Vrach. delo no.6:121-124 Je '62.

(MIRA 15:7)

1. Ukrainskiy nauchno-issledovatel'skiy institut gigiyeny truda i professional'nykh zabolevaniy.

(ULTRAVIOLET RAYS)
(METALLURGICAL PLANTS--HEATING AND VENTILATION)
(AIR--BACTERIOLOGY)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, G.S.

DUBININ, M.M.; ZHUK, G.S.; ZAVERINA, Ye.D.

Studies on the porous structure of solids by adsorption methods. Part 4: On the relation between various types of pores in active carbon [with summary in English]. Zhur. fiz. khim. 31 no.5:1126-1135 My '57. (MIRA 10:11)

1. Institut fizichskoy khimii AN SSSR.
(Carbon, Activated) (Adsorption)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

GIKALO, G.S.; GIKALO, E.A.; ZHUK, G.I.

New sweet pepper varieties for canning. Kons.i ov.prom. 17 no.2:25-28 F '62. (MIRA 15:5)

1. Opytno-selektsionnaya stantsiya v Krymske.
(Peppers)
(Vegetables, Canned)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

OVCHARENKO, O.I.; CHERKAS, G.P. [Cherkas, H.P.]; ZHUK, G.S. [Zhuk, H.S.]

Effect of bacterial toxins on the tissue culture. Mikrobiol. zhur. 26 no.5:44-49 '64. (MIRA 18:7)

1. Khar'kovskiy institut vaktsin i syvorotok im. Mechnikova.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZASLAVSKIY, I.N., inzh.; ZHUK, G.S., inzh.

Investigation of deformations of contraction and creep of concrete during prolonged heating. Stroi.konstr. no.2:127-136 '65. (MIRA 18:12)

1. Khar'kovskiy PromstroyNIIproyekt.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

AUTHORS: Afanas'yev, A.S. and Shuk, G.V. SOV/80-59-1-23/44

TITLE: Study of the Protective Action of Corrosion Inhibitor Mixtures in Neutral Media (Issledovaniye zashchitnogo deystviya smesey ingibitorov korrozii v neytral'nykh sredakh)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Nr 1, pp 141-150 (USSR)

ABSTRACT: Although corrosion inhibitors are often more effective in mixtures than individually, their mixtures have been poorly investigated thus far. This paper describes the results of laboratory tests of several mixtures performed by the authors. The tests were made on samples of St 20 steel, cleaned and freed from fat. The duration of tests was up to 5,650 hours at room temperature. The following inhibitors were tested for their effect on the atmospheric and underwater corrosion: sodium nitrite, sodium silicate, triethanolamine, sodium triphosphate, emulsol, and their mixtures in various concentrations. The minimum concentrations fully protecting steel were established for each inhibitor individually and for their mixtures. It was quantitatively established that the mixtures of these inhibitors are considerably more effective than the same inhibitors taken individually in equal concentrations.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

SOV/80-59-1-23/44

Study of the Protective Action of Corrosion Inhibitor Mixtures in Neutral Media

There are 6 graphs, 4 tables and 4 Soviet references.

ASSOCIATION: Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University)

SUBMITTED: June 10, 1957

Card 2/2

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, G.V., kand. khimich. nauk; MARKINA, L.V., inzh.; GLADUSH, V.M., inzh.; LEYBOVICH, N.I., kand. ekonom. nauk; TOPAL, D.M., inzh.

Investigating the quality of an enamel pipe coating. Proizv. trub no.11:113-118 '63. (MIRA 17:11)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

AL'TER, Lev Benitsianovich; ZHUK, I., red.; NEZNANOV, V., mladshiy red.; SMIRNOV, G., tekhn. red.

[Bourgeois economics of the U.S.A. in the main stages of the development of American capitalism] Burzhuaznaia politicheskaia ekonomiia SShA; na osnovnykh etapakh razvitiia amerikanskogo kapitalizma. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1961. 807 p. (MIRA 15:2)

(United States—Economics)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

AL'TER, L.B., doktor ekon. nauk; BLYUMIN, I.G., doktor ekon. nauk [deceased]; KARATAYEV, N.K., prof.; REUEL', A.L., doktor ekon. nauk; STEPANOV, I.G., doktor ekon. nauk; SHTEYN, V.M., doktor ekon. nauk; POLYANSKIY, F.Ya., doktorist. nauk; BOBKOV, K.I., kand. ekon. nauk; VASILEVSKIY, Ye.G., kand. ekon. nauk; MOROZOV, F.M., kand. ekon. nauk; PONOMAREV, Ye.I., kand. ekon. nauk; RYNDINA, M.N., kand. ekon. nauk; FIRSOVA, S.M., kand. ekon. nauk; TSAGA, V.F., kand. ekon. nauk; ZHUK, I., red.; VOSKRESENSKAYA, T., red.; NEZNANOV, V., red.; ULANOVA, L., tekhn. red.

[History of economic theories] Istoriia ekonomicheskikh uchenii. Moskva, Sotsekgiz, 1963. 549 p. (MIRA 17:2)

1. Akademiya nauk SSSR. Institut ekonomiki.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

KARATAYEV, N.K., doktor ekon.nauk; POLYANSKIY, F.Ya., doktor istor.nauk; TSAGOLOV, N.A., doktor ekon.nauk; VLASOV, N.A., kand.ekon.nauk [deceased]; KORNIYENKO, A.A., kand.ekon.nauk; MOROZOV, F.M., kand.ekon.nauk; PLITSYNA, K.T., kand.ekon.nauk; PODOROV, G.M., kand.ekon.nauk; CHUBUK, I.F., kand.ekon.nauk; PASHKOV, A.I., red.; ZHUK, I., red.; MOSKVINA, R., tekhn.red.

[History of Russian economic thought] Istoriia russkoi ekonomicheskoi mysli. Pod red. A.I.Pashkova i N.A.TSagolova. Moskva, Izd-vo sotsial'no-ekon.lit-ry. Vol.2. [Epoch of premonopolistic capitalism] Epokha domonopolisticheskogo kapitalizma. Pt.1. 1959. 526 p. (MIRA 13:5)

1. Akademiya nauk SSSR. Institut ekonomiki.
(Economics)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

PISKUNOV, V.; ZHUK, I.; KURILIN, N.; KAYDALOV, D.; VYSOTSKAYA, V.

Economic literature in 1961. Vop.ekon. no.4:120-126 Ap '61. (MIRA 14:3)

(Bibliography--Economics)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZVORYKIN, Anatoliy Alekseyevich; ZHUK, I., red.; ULANOVA, L., tekhn.red.

[Creating material and technological basis of communism in the U.S.S.R.] Sozdanie material'no-tekhnicheskoi bazy kommunizma v SSSR. Moskva, Izd-vo sots.-ekon.lit-ry, 1959. 102 p. (MIRA 12:8)

(Technology)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

AVSENEV, Mikhail Mikhaylovich; ZHUK, I., redaktor; PIOTROVICH, M., tekhnicheskiy redaktor

[How labor is paid in capitalist countries] Kak oplachivaetsia trud rabochikh v kapitalisticheskikh stranakh. Moskva, Gos. izd-vo polit. lit-ry, 1956. 71 p. (MLRA 9:12)
(Wages)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

PASHKOV, A.I.; KARATAYEV, N.K., doktor ekon.nauk; POLYANSKIY, F.Ya., doktor istor.nauk; TSAGOLOV, N.A., doktor ekonom.nauk; BEZMAN, R.R., kand.ekonom.nauk; PRIKAZCHIKOVA, Ye.V., kand.ekonom.nauk; SHUKHOV, N.S. Prinimali uchastiye: KOSHELEVA, Ye.F., mladshiy nauchnyy sotrudnik; KHUTORNA, V.F., mladshiy nauchnyy sotrudnik; CHIZHOVA, L.G., mladshiy nauchnyy sotrudnik; VILENSKAYA, V.S., starshiy nauchno-tekhnicheskiy sotrudnik; ZHUK, I., red.; MOSKVINA, R., tekhn.red.

[History of Russian economic thought] Istoriia russkoi ekonomicheskoi mysli. Pod red. A.I.Pashkova i N.A.TSagolova. Moskva, Izd-vo sotsial'no-ekon.lit-ry. Vol.2. [Epoch of premonopolistic capitalism] Epokha domonopolisticheskogo kapitalizma. Pt.2. 1960. 676 p. (MIRA 13:11)

1. Akademiya nauk SSSR. Institut ekonomiki. 2. Chlen-korrespondent AN SSSR (for Pashkov). 3. Institut ekonomiki AN SSSR (for Kosheleva, Khutorna, Chizhova).

(Economics)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, I.I. (g.Osipenko)

Excursion to a machine calculating department. Mat. v shkole no.5: 51-52 S-O '56. (School excursions) (MLRA 9:10)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, I.A.

Using dies to produce protectors and packing rings. Razved. i okh. nedr 31 no.1:59-60 Ja '65. (MIRA 18:3)

1. Kombinat "Baleyzoloto".

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

BULNAYEV, I.B.; ZHUK, I.A.; KOSTIN, Yu.S.; PETRACHKOV, L.I.

Multiple intersection of ore bodies in the Baley ore deposit. Razved. i okh. nedr 30 no.7:11-15 Jl '64.

(MIRA 17:12)

1. Baleyskaya geologorazvedochnaya ekspeditsiya.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

KARATAYEV, Nikolay Konstantinovich; STEPANOV, Ivan Georgiyevich; ZHUK, I., red.; ULANOVA, L., tekhn.red.

[History of economic theories of Western Europe and Russia begore the rise of Marxism; lecture course] Istoriia ekonomicheskikh uchenii Zapadnoi Evropy i Rossii (do vozniknoveniia marksizma); kurs lektsii. Moskva, Izd-vo sotsial'no-ekon.lit-ry, 1959. 438 p. (MIRA 12:12)

(Economics)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

RAYEVSKAYA, E.S.; ZHUK, I., red.; VOSKRESENSKAYA, T., red.; NEZNANOV, V., mladshiy red.; NOGINA, N., tekhn. red.

[Studies on the history of economic thought in Hungary] Ocherki istorii ekonomicheskoi mysli Vengrii. Moskva, Sotsekgiz, 1962. 211 p. Translated from the Hungarian.
(Hungary--Economics) (MIRA 15:9)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

25158

S/021/61/000/004/010/013
D213/D303

3,1730

AUTHORS: Braude, S.Ya., Corresponding Member AS UkrSSR
Men', A.V., Zhuk, I.M., and Babenkov, K.A.

TITLE: Spectrum of discrete source of the cassiopeia-A cosmic radio-radiation at frequencies below 30 Mc/s

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR, Dopovidi, no. 4, 1961, 469 - 472

TEXT: The aim of the article was to provide additional observations of the flux density of radio-sources Cassiopeia-A for the frequencies in the range 19.5 - 31 Mc/s, and to establish that the spectral index equals zero. It is assumed that the absorption of ionized hydrogen HII is the cause of such a change. V.A. Razin (Ref. 5: Radiofizika, 3, 584, 1960) has shown that absorption in hydrogen HII cannot be responsible for such a change in α. The author made his observations from May to September 1960. He used two broadband aerials, 5 m apart, each containing four rows, each row being 5.7m apart. Each row consists of six oscillators (5.5 m in length) pla-

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ced from east to west. Each oscillator is a horizontal broadbanded dipole consisting of 18 radii situated on the cylinder with a diameter of 1 m. They were placed 2.7 m over the metallized earth. 160 measurements in the range 19.5 - 31 Mc/s of the flux density of the radio-source Cassiopeia-A were made by interferometric radio telescope. To find the flux density I_k the following formula was used:

$$I_k = \frac{2P}{\eta A_e \Delta f} \qquad (1)$$

where Δf = the width of the band; P the difference between a) the power of the galactic ground together with the discrete source and b) the power of the galactic ground only; A_e - effective area of the aerial; η - coefficient for the whole radio-telescope (not less than 70 %) [Abstractor's note: A_e proved to be practically independent of the wavelength and is approximately equal to 220 m^2]. The results of research are given, showing the relation between

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Spectrum of discrete source ... S/021/61/000/004/010/013
D213/D303

the flux density and the frequency as calculated by different authors. It reveals that the spectral index approximately equals zero, except for three values f = 16.5, 19.5 and 22.6 Mc/s). It is stated that it would be of interest to carry out research on the spectrum of Cassiopeia-A and Cygnus-A in the range 10-20 Mc/s. There are 2 figures and 13 references: 6 Soviet-bloc and 7 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: G.R. Whitfield, M.N.R.A.S., 117, 680, 1957; G.R. Whitfield, Paris Symp. on Radio Astronomy, Stanford University Press, 58, 297, 1959; H.W. Wells, Pire, 46, 205, 1958 and A.C.B. Lovell and H.W. Wells, M.N.R.A.S. 121, III, 1960.

ASSOCIATION: Instytut radiofizyky ta elektroniky AN URSR (Institute of Radiophysics and Electronics, AS UkrSSR)

SUBMITTED: November 26, 1960

Card 3/3

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, I.M.

Milling machine attachment for making window sash stops.
Rats. i izobr. predl. v stroi. no.71:14-15 '53.
(Woodworking machinery--Attachments) (MLRA 9:6)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

20697

S/120/61/000/001/035/062
E192/E382

9,6000 (also 1040, 1067, 2604, 2904)

AUTHORS: Men', A.V. and Zhuk, I.N.

TITLE: Automatic Measuring Line for Short Radio Waves

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No. 1, pp. 112 - 116

TEXT: The measuring lines (including automatic ones) are widely used for various measurements at ultrahigh frequencies (Refs. 1, 2) but at metre waves it is necessary to employ bridge methods of measurement. These methods have a number of disadvantages and, consequently, an attempt has been made to devise an automatic measuring system based on a measuring line. The system described can be used at frequencies from 10 - 40 Mc/s. The system employs a multiprobe line from which the signals are taken by means of a switching device. A standard coaxial cable PK-1 (RK-1), having a length $l = 0.35\ \lambda_{max}$ (where $l \sim 10$ m) is used as the line; this is helically wound on a drum having a diameter of 300 mm. A number of probes (30 in all) are situated at equal distances along the line, the probes being coupled rather weakly with

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20697

Automatic Measuring Line S/120/61/000/001/035/062
E192/E382

the line. The signals from the probes are detected by suitable detector stages. The coupling between the probes and the line is adjusted mechanically as well as electrically, so that all the probes have the same sensitivity. The standing wave pattern is observed by successive switching of the outputs of the detector stages to the input of a measuring amplifier. The signals from the amplifier are applied to an oscillograph indicator. Since the coupling between the wave inside the cable and the probes has to be very low, the amplifiers must have a gain of about 120 db. The switching in the instrument is performed by a multicontact frictionless mechanical switches; the contact pairs close in succession. In order to reduce the interference produced by the switches the wave in the cable was amplitude-modulated. The optimum modulation frequency was dependent on the construction of the switching system. This frequency was 500 - 1 000 c.p.s., the switching frequency being 3 c.p.s. Additional reduction in the interference via the switching device was achieved by providing the amplifier with a low input resistance

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

20697

Automatic Measuring Line S/120/61/000/001/035/062
E192/E382

(about 7.5 kΩ). Physically, the instrument consists of three units: a high-frequency variable generator; a multiprobe line and an amplifier plus indicator with stabilised supply sources. The system permits a comparatively rapid measurement of the standing-wave ratios and phase. The instrument can also be used for the measurements of impedances and progressive waves, which is of importance in the adjustment of antenna systems and feeder lines. There are 4 figures and 2 Soviet references (one of which is translated from English).

ASSOCIATION: Institut radiofiziki i elektroniki AN UkrSSR (Institute of Radiophysics and Electronics of the AS Ukrainian SSR)

SUBMITTED: January 29, 1960

Card 3/3

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

BRAUDE, S. Ya.; MEN', A.V.; ZHUK, I.N.; BABENKOV, K.A.

Spectra of the Cassiopeia A radio source at frequencies below 30 megacycles. Dop.AN URSR no.4:469-472 '61. (MIRA 14:6)

1. Institut radiofiziki i elektroniki AN USSR. 2. Chlen-korrespondent AN USSR (for Braude).

(Radio astronomy)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

31995
S/142/61/004/004/016/018
E192/E382

9,1060

AUTHORS: Men', A.V., Zhuk, I.N. and Dudarev, N.I.

TITLE: Multiprobe measuring line with a contactless switch

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 4, no. 4, 1961, 494 - 496

TEXT: The instrument described was designed and built at the IRE AN UkrSSR (Institute of Radio-electronics of the AS UkrSSR) and has an operating bandwidth ranging from 10-40 Mc/s. Constructionally, it is in the form of two separate units: the radial frequency unit and a mechanical system. The mechanical system comprises a multiprobe line, a high-frequency capacitative switch, a capacitative current probe and collector and a synchronous drive motor operating at 1 500 r.p.m. The line of the system is in the form of a coaxial cable, type РК-6 (RK-6), having an impedance of 52 Ω and a length of 10 m; it is wound helically on a toroid. The electrical unit of the device consists of four circuits: a signal generator; an amplifier; a synchronous time-base and an indicator (output) circuit. The design principle of the instrument is illustrated in Fig. 1.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

31995
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E192/E382

Multiprobe measuring line ....

The signals from the HF generator 1, which has a wide operating range, are applied to the input of the long-line 2, which is terminated by the measured load. Weakly-coupled, screened probes are inserted into the line at equal intervals. The HF oscillations picked-up by the probes via the HF capacitative switch 3, the pick-up and the cylindrical collector 4 (which is driven by the synchronous electric motor) are applied successively to the input of the measuring amplifier 5. The HF signal of the generator is modulated by a low-frequency F_M and the amplifier 7, which is terminated by a nonresonant detector, is tuned to this frequency. During uniform rotation of the switch pulse signals are produced at the output of the amplifier and these are applied to the vertical plates of the cathode-ray indicator tube 6. Simultaneously, a trigger time-base waveform is applied to the horizontal plates of the tube from the amplifier 7; the time-base is triggered by the signal received from the first segment of the switch, which is produced by a special auxiliary generator 8, whose operating

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S/142/61/004/004/016/018
E192/E382

Multiprobe measuring line ....

frequency lies outside the operating range of the instrument. In this way, a screen of the indicator tube shows the distribution of the HF voltage along the line, the picture being in the form of a series of pulses. The envelope of these pulses determines the phase and modulus of the reflection coefficient of the measured load. If the signals appearing at the output of the HF switch are detected directly, the instrument can be used to measure the power standing-wave ratio. On the other hand, if an auxiliary non-modulated HF signal of a large amplitude is applied to the input detector, the voltage standing-wave ratio is measured. The instrument has been tested over a long period of time and it was found extremely useful in the adjustment of various types of antenna systems, matching devices, matching of feeders, input circuits of the receivers, filters, etc. There are 2 figures and 2 references: 1 Soviet-bloc and 1 English - Ref. 2 - Lester Zukerman, Electronics, 1959, 32, no. 12, 64.

Card 3/4

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

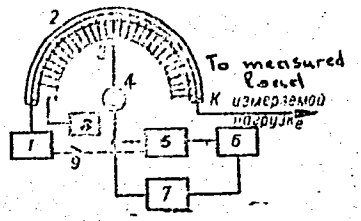
31995
S/142/61/004/004/016/018
E192/E582

Multiprobe measuring line ....

ASSOCIATION: Uchenyy sovet IRE AN UkrSSR (Scientific Council of the IRE AS UkrSSR)

SUBMITTED: October 15, 1960

Fig. 1:



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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

BRAUDE, S.Ya.; MEN', A.V.; ZHUK, I.N.; BABENKOV, K.A.

Radio emission spectrum of Cassiopeia-A at frequencies lower than 30 mc/sec. Astron.zhur. 39 no.1:163-165 Ja-F '62. (MIRA 15:2)

1. Institut radiofiziki i elektroniki AN USSR.
(Stars--Spectra)
(Radio astronomy)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ACCESSION NR: AP4007177 S/0141/63/006/005/0897/0903

AUTHOR: Pazelyan, L. L.; Braude, S. Ya.; Bruk, Yu. M.; Zhuk, I. N.; Men', A. V.; Ryabov, B. P.; Sodin, L. G.; Shary*kin, N. K.

TITLE: Radiation spectra of discrete radio sources Cassiopeia A, Cygnus A, Taurus A, and Virgo A at the 12.5 - 40 megacycle frequencies

SOURCE: IVUZ. Radiofizika, v. 6, no. 5, 1963, 897-903

TOPIC TAGS: radio emission, radio emission spectra, Cassiopeia A radio emission, Cygnus A radio emission, Taurus A radio emission, Virgo A radio emission, radio source spectrum, discrete radio source, radio spectroscopy, radio astronomy, radio frequency spectrum, Cassiopeia A, Cygnus A, Taurus A, Virgo A, extragalactic radiation, radiation absorption

ABSTRACT: To check on the hypothesis that a sharp change, manifest in a decrease in intensity with increasing wavelength, occurs in the radio emission spectrum of discrete radioastronomical sources below

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ACCESSION NR: AP4007177

40 Mc, the fluxes of Cassiopeia-A, Cygnus-A, Taurus-A, and Virgo-A were measured in the 12.5--40-Mc range, for which no reliable absolute values are known presently. To improve the accuracy, absolute measurements were made only for the most powerful source, Cassiopeia-A, using seven sets of radio interferometers with half-wave dipole antennas. The other fluxes were determined relative to this source. The 'collapse' of the spectrum at high frequencies was noted for all but Taurus-A. The emission measure and the ratio of the normal component of the magnetic field to the number of electrons per cubic centimeter of the discrete sources calculated from these measurements are 3.5, 3.5, 5.0 and 700, 700, 120 for Cassiopeia-A, Cygnus-A, and Virgo-A. It is assumed that the decrease in the spectrum is due either to absorption in H_{11} clouds or by a decrease of the refractive index in the source. Orig. art. has: 2 figures, 4 formulas, and 4 tables.

ASSOCIATION: Institut radiofiziki i elektroniki AN UkrSSR (Institute of Radiophysics and Electronics, AN UkrSSR)

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

WRITE BELOW THIS LINE

ACCESSION NR: AP4037397 S/0106/64/000/005/0014/0021

AUTHOR: Bazelyan, L. L.; Bruk, Yu. M.; Zhuk, I. N.; Men', A. V.; Shary*kin, N. K.

TITLE: Wide-band highly directional antenna for decameter wavelengths

SOURCE: Elektrosvyaz', no. 5, 1964, 14-21

TOPIC TAGS: antenna, directional antenna, highly directional antenna, wide band antenna, wide band highly directional antenna, beamwidth electric control, half wave dipole, shunt dipole, cylindrical dipole, array element, antenna element, antenna efficiency, antenna gain

ABSTRACT: A receiving antenna intended for radioastronomical investigation of discrete sources and cosmic background in the 20—40-mc range is described. The antenna was designed on the principle that the electric control of the beam at large scanning angles can be realized by phasing low-directional discrete elements, whose large

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ACCESSION NR: AP4037397

number insures the required degree of resolution. The antenna array, located along the W-E line, consists of 128 half-wave wide-band cylindrical dipoles arranged in 4 rows, each carrying 32 dipoles. The cylinders, formed by 18 elements of 8 mm each, are 1 m in diameter. The distance between array-element centers along and across the array is 5.5 m. The array elements are suspended 3 m above the ground. The signal excited in each element is transmitted to the output of each row through a matching balancer, three adders, and three coaxial cables with a total length of 101 m. The toroidal ferrite transformers used as adders made it possible in the 10- to 60-mc range to achieve a VSWR of 1.05 or better at a rated load with an efficiency of 95 to 97% or better. The electric control of the beam, which is accomplished by inserting delay cables between the adder and the output of each row, is carried out only in the N-S plane. The radiation pattern and gain of the antenna were determined by the simultaneous recording of signals from Cassiopea-A received with the antenna described and a standard interferometer consisting of two half-wave dipoles and subsequent comparison of the

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ACCESSION NR: AP4037397

results. At the same time the effective area (gain) was calculated by computer. Good agreement of experimental and theoretical data indicates that the antenna gain calculated on the basis of the gain found experimentally for the elevation of 81° will be close to actual, at least for the case of higher elevations. Orig. art. has: 11 figures and 1 formula.

ASSOCIATION: none

SUBMITTED: 04Mar63 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: EC NO REF SOV: 004 OTHER: 002

Card 3/3

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ACCESSION NR: AP4039721 S/0141/64/007/002/0215/0224

AUTHOR: Bazelyan, L. L.; Bruk, Yu. M.; Zhuk, I. N.; Men', A. V.; Sodin, L. G.; Shary*kin, N. K.

TITLE: Wide-band radiointerferometer with electric control of antenna pattern

SOURCE: IVUZ. Radiofizika, v. 7, no. 2, 1964, 215-224

TOPIC TAGS: antenna radiation pattern, antenna switching, radio astronomy, radio interferometer, radio emission

ABSTRACT: A broadband (20 — 40 Mcs) radio interferometer with a 470 meter base, oriented east and west, is described. The interferometer is intended for the investigation of radio emission from discrete sources and the cosmic background in the northern hemisphere by directivity-pattern scanning in a ± 90° elevation sector and by using the earth's rotation. The interferometer consists of 220 8-dipole plane arrays with remote digital control of the directivity pattern in the meridional plane. The description covers the principles underlying the control of the beam and the summation of the signals, the arrangement of the antenna, the control elements, the antenna directivity pattern, the antenna effective area, and the antenna gain. The large base facilitates separation of the source radio

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ACCESSION NR: AP4039721

emission from the cosmic background. The two interferometer antennas are different and can be used separately. The eastern one can be used as a transit instrument. By using the western antenna with beam scanning, it is possible to make two or three records of a source passing through the azimuthal pattern, with intervals of 10 -- 20 minutes. The resolution of the interference diagram is 1.6 -- 0.8° in direct ascension and 4° -- 2° in declination, at frequencies 20 -- 40 Mcs. It is recommended that the antennas be used separately for the radio emission of the cosmic background, in which case the resolution is 4 -- 2° in ascension and 34 -- 17° in declination for the eastern antenna, and 34 -- 17° in ascension and 4 -- 2° in declination for the western antenna (both at 20 -- 40 Mcs). Some precautions necessary in the operation of the interferometer are mentioned. Orig. art. has: 9 figures and 2 tables.

ASSOCIATION: Institut radiofiziki i elektroniki AN UkrSSR (Institute of Radiophysics and Electronics, AN UkrSSR)

SUBMITTED: 28Apr63 ENCL: 02

SUB CODE: AA, EC NR REF SOV: 001 OTHER: 003

Card 2/4

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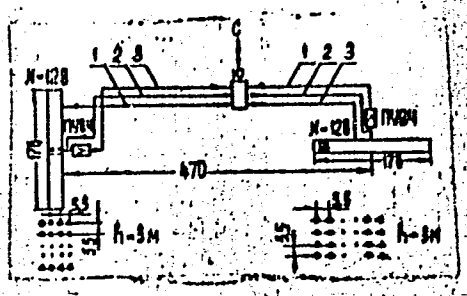
"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ACCESSION NR: AP4039721

ENCLOSURE: 01



Block diagram of the interferometer
1 - signal, 2 - calibration, 3 - control of directivity pattern

ПУВЧ - UHF receiver
C - north
D - south

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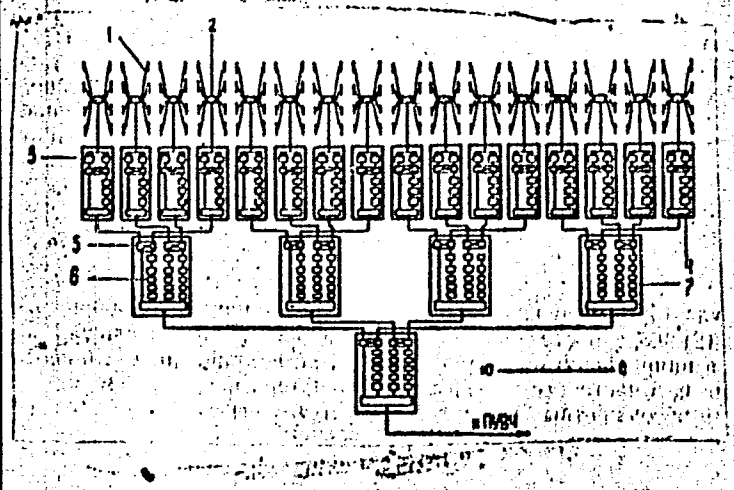
ACCESSION NR: AP4039721

ENCLOSURE: 02



Western interferometer antenna

1 - dipole, 2 - underground collector, 3 - junction for four elements, 5 - quadrant switch, 6 - binary switch cell, 7 - phase shifter

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L 40909-66 EWT(d)/EWT(1)/EEC(k)-2/EWP(v)/EWP(k)/EWP(h)/EWP(1) BC

ACC NR: AP6009937 SOURCE CODE: UR/0118/65/000/011/0025/0026

AUTHOR: Bukhtiarov, V. A. (Engineer); Zhuk, I. N. (Engineer); Kulakov, N. N. (Engineer); Lozovoy, Ye. K. (Engineer); Malich, V. V. (Engineer); Napreychikov, F. I. (Engineer) 57 B

ORG: none

TITLE: Inductive relay 25 for signaling, control, and telemetry 8

SOURCE: Mekhanizatsiya i avtomatizatsiya proizvodstva, no. 11, 1965, 25-26

TOPIC TAGS: electric relay, circuit design, telemetry equipment, automatic control equipment

ABSTRACT: The authors introduce a universal and stable inductive sensor which has a high degree of reliability and sensitivity. The inductive relay (sensor) proposed is intended for signaling, control, and telemetry. The device is based on a transistorized oscillator with tuned circuits in the base circuitry and on an emitter capable of operating in a "quasi-trigger" and intermittent oscillating mode. The all-purpose relay may be used in automatic control, monitoring and alarm systems, telemetry systems, and at unattended beacons. The output may be an electromagnetic relay or a contactless relay device of any type. The oscillator is distinguished by a high degree of frequency stability in all modes and uses a series-produced

UDC: 621.3.083:669.001.6

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L 40909-66

ACC NR: AP6009937

P16 transistor (16 to 350 kc). The basic specifications of the inductive relay are: operating frequency: 25 kc; sensitivity: 150—200 mm; length of connecting wire to oscillator: up to 50 m; a 24-v dc MKU-48 relay; and a 220-v ac 50-cps feed voltage. Orig. art. has: 3 figures.

SUB CODE: 09/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

Card 2/2 MLP

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, I.P., brigadir; CHAPLINSKIY, I.A.[Chapline'kyi, I.A.],brigadir

Let's honor the party with victories attained by labor. Mekh.sil'. hosp. 9 no.11:3 N '58. (MIRA 11:12)

1. Traktornyye brigady kolkhoza "Peremoga" Rovenskogo rayona, Rovenskoy oblasti.

(Collective farms)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

88273

21.1200
26.2231

S/170/61/004/001/015/020
B019/B056

AUTHORS: Yermakov, V. S., Zhuk, I. P., Yaroshevich, O. I.

TITLE: Calculation of Temperature in Fuel Elements of a Nuclear Reactor in Transient Conditions

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1961, Vol. 4, No. 1, pp. 104-108

TEXT: The temperature distribution in fuel elements of a water-moderated water-cooled reactor in transient conditions is investigated. The authors proceed from the known set of differential equations for the temperature field of a cylindrical fuel element consisting of rod, airgap, and jacket. This nonlinear differential equation is simplified by assuming mean values of the thermal conductivity coefficient λ being a temperature function, for various temperature zones of the fuel element. This simplified linear differential equation reads:

$c_i \gamma_i \frac{\partial t_i}{\partial \tau} = \lambda_{ik} \nabla^2 t_i + Q_i (r, \tau)$, where i = 1, 2, 3, corresponding to the

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88273

Calculation of Temperature in Fuel Elements of a Nuclear Reactor in Transient Conditions

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B019/B056

rod, the airgap or the jacket, and k is the k-th temperature zone. By means of this equation the fuel elements of a BBP (VVR) reactor with a power efficiency of 760 megawatts is investigated. The thermal capacity of the airgap and the jacket are neglected, and the He and Al-mass is assumed to be small compared to the UO_2-mass; furthermore, the temperature drop in the Al-jacket is neglected. For the temperature of the core, the following expression is obtained by means of a Hankel-transformation:

$$t(\xi,\tau) = qT\left[1 - \frac{hI_0\left(\frac{\xi}{\sqrt{aT}}\right)}{\frac{1}{aT}I_1\left(\frac{1}{\sqrt{aT}}\right) + hI_0\left(\frac{1}{\sqrt{aT}}\right)}\right]e^{\tau/T}$$

$$- \frac{2qh}{a}\sum_{i=1}^{\infty}\frac{e^{-a\mu_i^2\tau}}{(\mu_i^2+h^2)(\mu_i^2+\frac{1}{aT})}\;\frac{J_0(\mu_i\xi)}{J_0(\mu_i)} \qquad (15)$$

μ_i are the positive roots of the equation $\mu J_1(\mu) = hJ_0(\mu)$ (16). For

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Calculation of Temperature in Fuel Elements of a Nuclear Reactor in Transient Conditions

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calculating with (15) it is now necessary to know the reactor period as well as the time within which the reactor attains a certain power output. Table 1 shows the results. There are 1 table and 7 references: 5 Soviet, 1 British, and 1 US.

ASSOCIATION: Institut energetiki AN BSSR, g. Minsk (Institute of Power Engineering of the AS BSSR, Minsk)

SUBMITTED: August 16, 1960

Legend to Table 1: 1) Time from the beginning of the reactor startup onward. 2) Core radius in mm. t*) Temperature, calculated by means of a hydrointegrator. t**) Temperature calculated analytically.

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Таблица 1

Температурное поле сердечника ТВЭЛ при изменении уровня мощности реактора с 10^{-1} $W_н$ до $W_н$ (время удвоения мощности 20 *сек*, T = 28,8 *сек*)

Время с начала разгона, *сек*	Радиус сердечника ТВЭЛ, *мм*									
	1,393		2,42		3,12		3,69		4,18	
	t^*	t^{**}	t^*	t^{**}	t^*	t^{**}	t^*	t^{**}	t^*	t^{**}
30	388	386	348	348	310	311	272	275	232	235
40	546	531	488	478	434	427	384	376	324	322
50	776	748	698	672	614	600	544	528	460	451
55	920	888	820	797	732	712	648	626	552	535
60	1092	1055	972	948	868	846	768	745	652	637
65	1290	1254	1148	1126	1020	2005	904	885	772	756
66	1376	1326	1218	1181	1080	1053	956	936	820	800

Примечания: t^*—температура, полученная с помощью гидроинтегратора, t^{**}—рассчитанная аналитически.

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22825

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B111/B214

26.2230

AUTHORS: Yermakov, V. S., Zhuk, I. P., Yaroshevich, O. I.

TITLE: The problem of nonstationary heat transmission in the fuel elements of a nuclear reactor

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 5, 1961, 96-99

TEXT: The problem of nonstationary heat transmission in the fuel elements of a nuclear reactor is solved in this paper. For this purpose, the simplifying assumptions made in Ref. 1 (IFZh, v. IV, no. 1, 1961) are not taken into account. It is assumed that the temperature distribution at the beginning of the transient $t(0, r) = \psi(r)$ is nonuniform and that the intensity of the heat production is time dependent as obtained by the solution of the dynamic reactor equation. The solution of the dynamic reactor equation in one-group approximation with a decay constant τ is found to be:

$$n = n_0 \left[\frac{\beta}{\beta - \rho} e^{\frac{\tau \rho}{\beta - \rho}} - \frac{\rho}{\beta - \rho} e^{-\frac{\beta - \rho}{L} \tau} \right]. \quad (1),$$

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where n_0 is the density of thermal neutrons at the beginning of the transient ρ .. the reactivity of the reactor, β the fraction of slowed down neutrons, and L the mean lifetime of neutrons. For the production of heat $Q(\tau)$ in a thermal reactor one may write:

$$Q = Q_0 [A_1 e^{\alpha_1 \tau} - A_2 e^{-\alpha_2 \tau}], \qquad (2).$$

where

$$A_1 = \frac{\beta}{\beta - \rho}; \quad A_2 = \frac{\rho}{\beta - \rho}; \quad \alpha_1 = \frac{\bar{\tau}\rho}{\beta - \rho}; \quad \alpha_2 = \frac{\beta - \rho}{L}.$$

The problem of the radial temperature distribution inside a fuel element may be mathematically formulated in the following manner:

$$\frac{\partial t(r,\tau)}{\partial \tau} = a\left(\frac{\partial^2 t(r,\tau)}{\partial r^2} + \frac{1}{r}\frac{\partial t(r,\tau)}{\partial r}\right) + \frac{Q_0}{c\gamma}(A_1 e^{\alpha_1 \tau} - A_2 e^{-\alpha_2 \tau}), \qquad (3) \text{ to } (6)$$

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Equation (3) under the conditions (4) and (6) may be solved with the help of a Laplace transform. The solution is obtained in the following form:

$$t = \frac{Q_0 A_1}{c\gamma\alpha_1}\left(1 - \frac{h I_0\left(\sqrt{\frac{\alpha_1}{a}}\, r\right)}{h I_0\left(\sqrt{\frac{\alpha_1}{a}}\, R\right) + \sqrt{\frac{\alpha_1}{a}}\, I_1\left(\sqrt{\frac{\alpha_1}{a}}\, R\right)}\right) e^{\alpha_1 \tau} +$$

$$+ \frac{Q_0 A_2}{c\gamma\alpha_2}\left(1 + \frac{h J_0\left(\sqrt{\frac{\alpha_2}{a}}\, r\right)}{h J_0\left(\sqrt{\frac{\alpha_2}{a}}\, R\right) - \sqrt{\frac{\alpha_2}{a}}\, J_1\left(\sqrt{\frac{\alpha_2}{a}}\, R\right)}\right) e^{-\alpha_2 \tau} - \qquad (7).$$

$$- \left[\frac{Q_0}{h}(1 + hR) + \frac{2Q_0 h}{c\gamma R}\left(\frac{A_1}{\alpha_1} + \frac{A_2}{\alpha_2}\right) - \frac{2hT}{R}\right] \times$$

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$$\times \sum_{\mu_i} \frac{J_0(\mu_i r) e^{-\mu_i^2 a \tau}}{(\mu_i^2 + h^2) J_0(\mu_i R)} +$$

$$+ \frac{2Q_0 A_1 ah}{c\gamma\alpha_1 R} \sum_{\mu_i} \frac{\mu_i^2 J_0(\mu_i r) e^{-\mu_i^2 a \tau}}{(\mu_i^2 a + \alpha_1)(\mu_i^2 + h^2) J_0(\mu_i R)} +$$

$$+ \frac{2Q_0 h}{\lambda R} \sum_{\mu_i} \frac{J_0(\mu_i r) e^{-\mu_i^2 a \tau}}{\mu_i^2 (\mu_i^2 + h^2) J_0(\mu_i R)} -$$

$$- \frac{2Q_0 A_2 ah}{c\gamma\alpha_2 R} \sum_{\mu_i} \frac{\mu_i^2 J_0(\mu_i r) e^{-\mu_i^2 a \tau}}{(\alpha_2 - \mu_i^2 a)(\mu_i^2 + h^2) J_0(\mu_i R)} + \Theta. \quad (7)$$

Here, μ_i are the positive roots of the equation $\mu_i I_1(\mu_i R) = h I_0(\mu_i R)$. The solution of (7) can be considerably simplified. The first, second, and sixth terms of (7) vanish almost completely 1 second after the beginning of the transient if the temperature field differs only slightly from the stationary value. The simplified expression is:

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$$t = \frac{Q_0 A_1}{c\gamma a_1}\left[1 - \frac{h\, I_0\left(\sqrt{\frac{a_1}{a}}\, r\right)}{h I_0\left(\sqrt{\frac{a_1}{a}}\, R\right) + \sqrt{\frac{a_1}{a}}\, I_1\left(\sqrt{\frac{a_1}{a}}\, R\right)}\right] e^{a_1\tau} -$$

$$-\left[\frac{Q_0}{\lambda}(1 + hR) + \frac{2Q_0 h}{c\gamma R}\left(\frac{A_1}{a_1} + \frac{A_2}{a_2}\right) - \frac{2hT_1}{R}\right]\frac{J_0(\mu_1 r)e^{-\mu_1^2 a\tau}}{(\mu_1^2 + h^2)J_0(\mu_1 R)} +$$

$$+ \frac{2Q_0 A_1 a h}{c\gamma a_1 R}\,\frac{\mu_1^2 J_0(\mu_1 r)\, e^{-\mu_1^2 a\tau}}{(\mu_1^2 a + a_1)(\mu_1^2 + h^2)J_0(\mu_1 R)} +$$

$$+ \frac{2Q_0 h}{\lambda R}\,\frac{J_0(\mu_1 r)e^{-\mu_1^2 a\tau}}{\mu_1^2(\mu_1^2 + h^2)J_0(\mu_1 R)} + \Theta. \qquad (9)$$

The numerical calculations were made for the fuel elements of the reactor of type ВВР (VVR) and compared with the calculations made earlier for an analogous problem with the help of an analogous computer. The values were

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The problem ...

found to be practically coincident so that both methods can be applied. The solution obtained describes the nonstationary temperature field of the fuel elements of a reactor with constant rate of starting up. There are 1 table and 3 Soviet-bloc references.

ASSOCIATION: Institut energetiki AN BSSR, g. Minsk (Institute of Power Engineering, AS BSSR, Minsk)

SUBMITTED: February 14, 1961

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ZHUK, I.P.

Heat transfer in closed structures. Inzh.-fiz.zhur. no.5:119-123 My '62. (MIRA 15:7)
(Heat engineering)

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002064910016-2

ZHUK, I.P.

Heat transfer in enclosing structures. Inzh.-fiz. zhur. 5 no.6:121-125 Je '62. (MIRA 15:12)

1. Energeticheskiy institut AN BSSR, Minsk.
(Heat—Transmission)
(Structures, Theory of)

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41315

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B104/B186

26.5 11

AUTHOR: Zhuk, I. P.

TITLE: Calculation of the temperature field of a multilayered wall

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 5, no. 10, 1962, 100 - 103

TEXT: This is studied for the following cases: (a) the temperature field on the outer surface changes harmonically ($t_1(o,\tau) = t_{10} + t_m \cos\omega\tau$, $t_1(o,o) = t_{10} + t_m = T_1$), while the temperature on the inner surface remains constant: ($t_n(l_n,\tau) = T_n$). (b) The temperature field on the outer surface changes harmonically ($t_{10} + t_m \cos\omega\tau = t_1(0,\tau)$, $t_{10} + t_m = T_1$), while on the inner surface heat is exchanged with a medium at constant temperature ($\lambda_n \partial t_n/\partial x = -\alpha(t - t_{mean})|_{x = l_n}$. The general solution

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$$t_k(x,\tau) = d_k x + b_k + t_m\left[\Phi_k(p,x,\tau)|_{p=0} + \right.$$

$$\left. + \operatorname{Re}\Phi_k(x,p,\tau)|_{p=i\omega}\right] + \sum_{j=1}^{\infty} A\,\Phi_k'(p,x,\tau)|_{p=-\mu_j^2},$$

$$\Phi_k = \frac{\Delta_k e^{q_k x} + \Delta_{-k} e^{-q_k x}}{\Delta}\exp(p\tau);\ q_k = \sqrt{\frac{p}{a_k}}; \qquad (2)$$

$$\Delta = \begin{vmatrix} 1 & 1 & 0 & 0 & \dots & 0 \\ a_{11} & a_{12} & a_{13} & a_{14} & \dots & a_{1\,2n} \\ \dots & \dots & \dots & \dots & \dots & \dots \\ a_{2n-1\,1} & a_{2n-1\,2} & a_{2n-1\,3} & a_{2n-1\,4} & \dots & a_{2n-1\,2n} \end{vmatrix}$$

to system

$$\frac{\partial t_k}{\partial \tau} = a_k \frac{\partial^2 t_k}{\partial x^2} \quad k = 1, \dots, n; \qquad (1)$$

$$t_{k+1}(l_k,\tau) = t_k(l_k,\tau);\ \frac{\lambda_k}{\lambda_{k+1}}\frac{\partial t_k}{\partial x} = \frac{\partial t_{k+1}}{\partial x}\Big|_{x=l_k}$$

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of this problem takes the form

$$t_1(x,\tau) = d_1x + b_1 - t_m\,[A_1(x) - B_1(x)\cos(\omega\tau - \gamma + \beta_{1x})] + \sum_{j=1}^{\infty} D_1(x)\exp(-\mu_j^2\tau), \quad (3)$$

$$t_2(x,\tau) = d_2x + b_2 - 2t_m\,[A_2(x) - B_2(x)\cos(\omega\tau - \gamma - \beta_{2x})] + \sum_{j=1}^{\infty} D_2(x)\exp(-\mu_j^2\tau), \quad (4)$$

$$t_3(x,\tau) = d_3x + b_3 - 4t_m\,[A_3(x) - B_3(x)\cos(\omega\tau - \gamma - \beta_{3x})] + \sum_{j=1}^{\infty} D_3(x)\exp(-\mu_j^2\tau). \quad (5)$$

for a three-layered wall. This solution is discussed for the cases (a) and (b). Thus it is possible to calculate the heat transfer through a wall in which the heat is multiply reflected, also to determine the times when thermal oscillations occur and when the maximum temperature is attained.

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Calculation of the temperature... S/170/62/005/010/008/009
B104/B186

ASSOCIATION: Energeticheskiy institut AN BSSR, g. Minsk (Institute of Power Engineering AS BSSR, Minsk)

SUBMITTED: May 26, 1962

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S/170/63/006/003/014/014
B104/B186

AUTHORS: Krylovich, V. I., Zhuk, I. P.

TITLE: Conference on the theory of regular heat conditions

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 3, 1963, 118 - 123

TEXT: The conference on the theory of regular heat conditions held on September 25, 1962, in Kiyev in the AS UkrSSR was attended by more than 130 persons from all parts of the USSR. A paper by G. N. Tret'yachenko published in IFZh, no. 9, 1962 was discussed. The conference was opened by the Scientific Main Secretary of the Presidium of the AS UkrSSR, Corresponding Member of the AS UkrSSR G. S. Pisarenko. The chief editor of the IFZh, Academician AS BSSR A. V. Lykov, indicated the different branches of heat physics in which Soviet Scientists work and mentioned G. M. Kondrat'yev and Professor G. N. Dul'nev. First a report of Candidate of Technical Sciences G. N. Tret'yachenko (Kiyev) was discussed. He dealt with misconceptions of the theory and analyzed the origins of the errors. Reports by Professor G. N. Dul'nev, Doctor of Technical Sciences, and Candidate of Technical Sciences N. A. Yaryshev examined the main

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characteristic of first order regular heat conditions and the time necessary for approaching regular conditions on cooling a system. These reports were discussed by Professor Ye. V. Kudryavtsev, Doctor of Technical Sciences, Professor O. A. Kremnev, Candidate of Technical Sciences G. F. Muchnik, Docent N. V. Shumakov, G. I. Pavlovskiy and others. They pointed out the virtues and deficiencies of regular condition methods and showed that there is no method for theoretically estimating the time necessary for approaching the regular conditions. P. N. Romanenko, M. N. Golyand, G. N. Dul'nev, L. I. Kudryashev, L. I. Zhemkov, and others showed that the experiments of G. N. Tret'yachenko are carried out in pre-regular conditions and the results may not be considered as a proof of the incorrectness of regular condition methods for investigating bodies of complex shapes. A. V. Lykov stated that the theory of regular conditions has a formal mathematical character but no precise physical sense. The methods and instruments for regular condition experiments developed by G. M. Kondrat'yev et al. have certain deficiencies: (1) it is impossible to determine the physical parameters (λ,c,a) of a material in a single test; (2) the measuring instruments are inserted into the test specimen; this may result in considerable mechanical damage and distortion of the temperature field, and hence erroneous conclusions; (3) it is difficult

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to ensure homogeneous filling of the instrument with the test material; this may disturb the heat exchange and induce errors when measuring the physical characteristics. V. I. Kochurov (TsKTI, Leningrad) explained the relation between heat inertia of a system and its effect upon the surrounding medium from the aspect of regular heat condition.

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