K.

USSR/Forestry - Forest Cultivation.

Abs Jour : Ref Zhur- Biol., No 4, 1958, 15378

Author : F.I. Akakiyev
Inst : -
Title : The Effect of the Technological Processes of Logging on the Maintainability of Preliminary Renewal Undergrowth.
(Vliyaniye tekhnologicheskogo protsessa lesozagotovok na sokhranyayemost' podrosta predvaritel'nogo vozobnovleniya).

Orig Pub : Tr. Karel'sk. fil. AN SSSR, 1957, Vyp. 7, 15-25

Abstract : The various instructional positions are critically examined which were taken in 1954 in "The Order of processing the wood to be felled by complex mechanized logging with a consideration of the necessity of leaving undergrowth and wood springing up in the cut clearings of both coniferous and hard leaved species."

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K.

USSR/Forestry - Forest Cultivation.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15378

In March, July, August and October 1954 on the grounds of the Petrozavodskiy timberland (In the Karelian-Finish SSR) in the spruce wood growing whortleberry, the effects of each phase of technological lumbering with a logging tractor on maintaining spruce underwood were studied. Extensive quantitative data is presented. It was established that during summer logging one maintained 50%, and during winter logging 70% of the undergrowth, 30% of the underbrush still kept was damaged. The new "Long beehive" method of working forest clearings was not efficient in keeping up undergrowth in comparison with the cross-cut strip method. Clearing out the fellings by fire, particularly the spring "extra clean up" is a fundamental cause of destruction of the underwood maintained after log hauling.

Card 2/2

12

AKAKIYEV, F.I.

Importance of phenological forms of spruce in mass breeding work in southern Karelia. Izv. Kar. i Kol'. fil. AN SSSR no.1:130-138 '59. (MIRA 12:9)

1. Institut lesa Karel'skogo filiala AN SSSR.
(Karelia--Spruce)

AKAKIYEV, F.I.

Physical and mechanical properties of wood from early and late spruce. Izv. Kar. i Kol'.fil. AN SSSR no.2:108-110 '59. (MIRA 12:11)

1. Institut lesa Karel'skogo filiala AN SSSR.
(Spruce)

AKAKIYEV, F.I.

Seed production and the quality of seeds of various phenological types of spruce. Trudy Kar.fil. AN SSSR no.16:19-29 '59. (MIRA 13:4)

(Spruce)

AMANIYEV, F. I., Cand Biol Sci -- (dissertation) "Certain biological characteristics and forestry values of the principal local forms of [illegible]," Leningrad, 1960, 16 pp (Botanical Institute im V. L. Komarov, AS USSR) (KL, 25-60, 124)

AKALAYEV, G.G.; VARTANOV, N.A.; SAMOYLOV, P.S.

Low-energy γ-transitions in Pu^{238} and Pu^{240}. Atom.energ. 16 no. 5:452-453 My '64. (MIRA 17:5)

AKALAYEV, G. G.; BARTANOV, N. A.; SAMOYLOV, P. S.

"Results on Fluorescent Yields for the L Shell of Np and Pu."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

ACCESSION NR: AP4036532 S/0089/64/016/005/0452/0453

AUTHORS: Akalayev, G.G.; Vartanov, N.A.; Samoylov, P.S.

TITLE: Low-energy gamma transitions in Pu sup 238 and Pu sup 240

SOURCE: Atomnaya energiya, v. 16, no. 5, 1964, 452-453

TOPIC TAGS: plutonium gamma transition, curium admixture, gamma transition, low energy transition, Pu sup 238, Pu sup 240

ABSTRACT: This work has been prompted by the fact that data concerning the radiation of Pu^{238} and Pu^{240} does not contain a comparison of internal conversion coefficients (ICC) of gamma transition with the newly derived theoretical ICC values for the L and M conversions. Such a comparison is important to establish possible ICC anomalies of accelerated E2 electrons of strongly deformed nuclei. The gamma radiation spectra of Cm^{242} and Cm^{244} (whose alpha decay forms Pu^{238} and Pu^{240}) has not been studied as yet. In addition, it was interesting to distinguish the degree of purity of curium from other products. The results of this study are consolidated in two tables according to measurements made with a magnetic spectrometer

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ACCESSION NR: AP4036532

with double focusing at $\pi/\sqrt{2}$ angle and a gamma-scintillator spectrometer with one NaI(Tl) crystal, 40x40 mm. It was found that the experimental ICC values for $L_{II}:L_{III}$ and $M_{II}:M_{III}$ coincide with the theoretical values with 5-10% accuracy. Admixtures of Eu^{154} and Eu^{155} were found. No interpretation of the Auger electrons was made. Orig. art. has: 2 tables.

ASSOCIATION: None

SUBMITTED: 19Sep63 ENCL: 00

SUB CODE: NP NR REF SOV: 006 OTHER: 001

Card 2/2

ACCESSION NR: AP4042974 S/0048/64/028/007/1259/1263

AUTHOR: Akalayev, G.G.; Vartanov, N.A.; Samoylov, P.S.

TITLE: L-fluorescence yields from Np and Pu [Report, Fourteenth Annual Conference on Nuclear Spectroscopy held in Tibilisi 14-22 Feb 1964]

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v. 28, no. 7, 1964, 1259-1263

TOPIC TAGS: fluorescence yield, Auger electron yield, gamma ray spectrum, internal conversion, Coster Kronig radiation, neptunium, plutonium, nuclear radiation

ABSTRACT: The emission of x-rays and electrons from nuclei at $Z \geq 73$, where there is a sharp increase in L-fluorescence yields, is of interest because in this region both the Auger effect and Coster-Kronig transitions can occur. The essay at hand determines from the radioactive decay of Am^{241} and $Cm^{242,244}$ the mean L-fluorescence yields at $Z = 93$ and 94, as well as the fluorescence, Auger, and Coster-Kronig electron yields for the L_1, L_2, and L_3 subshells at $Z = 93$. The electron spectra of Am^{241} and $Cm^{242,244}$ in mixture with Eu^{154} were measured by means of a double focusing magnetic β-spectrometer; the γ-- ray spectrum of

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ACCESSION NR: AP4042974

Cm was recorded on a scintillation spectrometer with an NaI(Tl) crystal coupled to an AI-100 100-channel pulse-height analyzer. The data on the γ-radiation from Am^{241} were taken from the work of P.P. Day (Phys. Rev. 97, 689, 1955). Some of the experimental spectra obtained in the present work are reproduced in figures. The values of the fluorescence, Auger, and Coster-Kronig yields arrived at on the basis of the experimental results are tabulated and compared with the results of theoretical calculations by M.A. Listengarten (Izv. AN SSSR, Ser. Fiz., 24, 1041, 1960). The agreement is generally good. The mean L-fluorescence yield for Z = 93 is about 0.66. Orig. art. has: 4 formulas, 4 figures, and 1 table.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: OP, NP

NO REF SOV: 004 OTHER: 004

Card 2/2

AKALAYEV, K. Kh.

"Arteriography in Endarteritis Obliterans." Cand Med Sci, Tashkent Medical Inst imeni V. M. Molotov, Tashkent, 1954. (KL, No 6, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertation Defended at USSR Higher Educational Institutions. (14)

AKALAYEV, N.kh., kand.med.nauk

Case of impassable obstruction caused by intestinal calculi.
Med.zhur.Uzb. no.8-9:122-123 Ag-S '58. (MIRA 13:6)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. V.K. Yasevich) Tashkentskogo gosudarstvennogo meditsinskogo instituta.
(INTESTINES--OBSTRUCTIONS) (CALCULI)

YASEVICH, V.K., prof.; KHODIYEV, E.M., assistent; VAVILIN, M.K.; AKALAYEV, N.Kh.; BORZENKO, A.A., ordinator; ALIMOV, R.A.; RABINOVICH, S.A.; TSENER, Kh.Kh.; KOKOSOVA, T.A.

Angiocardiography in the diagnosis of congenital vitia cordis. Med. zhur. Uzb. no.10:10-16 '61. (MIRA 14:10)

1. Iz fakul'tetskoy khirurgicheskoy kliniki sanitarnogo i pediatricheskogo fakul'tetov (zav. - prof. V.K.Yasevich) Tashkentskogo gosudarstvennogo meditsinskogo instituta.
(ANGIOCARDIOGRAPHY)
(HEART--ABNORMITIES AND DEFORMITIES)

VIL'NER, Yakov Moiseyevich, dots.; VOINYARSKIY, Iosif Pinkhusovich, dots.; KOVALEV, Yakov Timofeyevich, dots.; KUZMENKOV, Vasiliy Ivanovich, dots.; LAZAREVICH, Ivan Grigor'yevich, dots.; SHUL'PIN, Igor' Aleksandrovich, dots.; AKALOVICH, N.M., red.

[Laboratory practice in hydraulics: Manual and methodological instructions on laboratory procedures in hydraulics; for correspondence and part-time students] Laboratornyi praktikum po gidravlike: Rukovodstvo i metodicheskie ukazaniia po provedeniiu laboratornykh rabot po gidravlik dlia studentov zaochnogo i vechernego obucheniia. [By] IA.M.Vil'ner i dr. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1961. 131 p. (MIRA 18:4)

1. Kafedra gidravliki Belorusskogo politekhnicheskogo instituta (for all except Akalovich).

LYAKHOVICH, L.S.; BELYAYEV, V.I.; ROMAN, O.V., kand.tekhn.nauk, dots., retsenzent; AKALOVICH, N.M., red.; KONCHITS, Ye.P., tekhn. red.

[Nitriding steel by heating with high frequency currents] Azotirovanie stali nagrevom tokami vysokoi chastoty. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1961. 44 p. (MIRA 15:7)
(Case hardening) (Induction heating)

AREKHOV, Viktor Zakhar'yevich; SHINKEVICH, N.I., dots., red.; AKALOVICH, N.M., red.; MORGUNOVA, G.M., tekhn. red.

[Manual on mechanical drawing; geometrical drawing and collection of problems]Posobie po tekhnicheskomu cherecheniiu; geometricheskoe cherchenie i sbornik zadach. Izd.2., perer. i dop. Pod obshchei red. N.I.Shinkevicha. Minsk, Izd-vo M-va vysshego srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1962. 105 p. (MIRA 15:11)

(Mechanical drawing—Study and teaching)

YERMOLENKO, Nikolay Nikitich; KONTSEVAYA, T.V., red.; AKALOVICH, N.M., red.; DUBOVIK, A.P., tekhn. red.

[Thermal properties of glass] Termicheskie svoistva stekla. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1962. 139 p. (MIRA 15:7)
(Glass--Thermal properties)

NEVZOROVA, N.N., kand. tekhn. nauk, nauchn. red.; AKALOVICH, N.M., red.

[Studying the strength of the running gear of a car] Issledovanie prochnosti khodovykh chastei vagona; sbornik statei. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1962. 45 p. (MIRA 18:1)

1. Gomel'. Belorusskiy institut inzhenerov zheleznodorozhnogo transporta.

TATUR, Gennadiy Kuz'mich; KONTSEVAYA, T.V., red.; AKALOVICH, N.M., red.; PESINA, S.A., tekhn. red.

[Course in the strength of materials]Kurs soprotivleniia materialov. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR. Pt.1. 1962. 230 p. (MIRA 15:9)

(Strength of materials)

KRECHETOVICH, Nikolay Nikolayevich; AKALOVICH, N.M., red.; DUBOVIK, A.P., tekhn. red.

[Automatic and remote control]Avtomatika i telemekhanika. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1962. 233 p. (MIRA 15:9)

(Automatic control) (Remote control)

IVANOV, Konstantin Vladimirovich; ANEYCHIK, A.P., red.; AKALOVICH,N.M., red.; MORGUNOVA, G.M., tekhn. red.

[Technological and hydraulic calculations in water-supply systems] Tekhnologicheskie i gidravlicheskie raschety po vodosnabzheniiu. Minsk, Izd-vo M-va vysshego sredn. spets. i profes. obrazovaniia BSSR. Pt.1.[Water-supply network and its structures] Vodoprovodnaia set' i sooruzheniia na seti. 1963. 300 p. (MIRA 16:11)
(Water supply engineering)

KRUPITSKIY, Emmanuil Iosifovich; AKALOVICH, N.M., red.; KISLYAKOVA, M.N., tekhn. red.

[Manual for bench work] Posobie po slesarnomu delu. Izd.2. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1963. 248 p. (MIRA 16:8)

(Machine-shop practice)

ODEL'SKIY, E.Kh., zasl. deyatel' nauki i tekhniki, doktor tekhn. nauk, prof., red.; AKALOVICH, N.M., red.; LITVINSKAYA, T.S., red.; TETERINA, L.N., red.

[Problems of construction thermophysics; transactions of the Interuniversity Scientific Conference held jointly with workers from industry, research and design institutes and the Scientific Technological Society of the building industry of the U.S.S.R., February 1-4, 1964 in Minsk] Problemy stroitel'noi teplofiziki; trudy Mezhvuzovskoi nauchnoi konferentsii sovmestno s rabotnikami promyshlennosti, nauchno-issledovatel'skikh i proektnykh institutov i NTO stroiindustrii SSSR 1-4 fevralia 1964. g., g. Minsk. Minsk, Vysshaia shkola, 1965. 526 p. (MIRA 18:7)

1. Mezhvuzovskaya nauchnaya konferentsiya po problemam stroitel'noy teplofiziki, Minsk, 1964. 2. Belorusskiy politekhnicheskiy institut, Minsk (for Odel'skiy).

LEONOVICH, Ivan Iosif[illegible] GAST[illegible], B[illegible], doktor tekhn. nauk, retsenzent; GRIPSHEVICH, A.G., kand. tekhn.nauk, retsenzent; MARTYNIKHIN, [illegible] kand.tekhn.nauk, nauchn.red.; AKALOVICH, N.M., red.

[Automotive logging roads; design, construction and operation of logging roads with examples and problems] Avtomobil'nye lesovoznye dorogi; proektirovanie, stroitel'stvo i ekspluatatsiia lesovoznykh dorog s primerami i zadachami. Minsk, Vysshaia shkola, 1965. (MIRA 18:12)

SHAROV, B.V., kand.med.nauk; VOROKOV, G.L.; AKALOVSKAYA, L.F.; BLEYKHER, V.M.; FRUMKIN, Ya.P., prof.

Electroencephalographic studies of some psychical diseases. Vop. klin. nevr. i psikh. no.2:235-267 '58. (MIRA 14:10)
(ELECTROENCEPHALOGRAPHY) (MENTAL ILLNESS)

35288. Besprovodnaya peredacha energii po volnovomu kanalu S zerkolom U priemnoy antenny. V. SB: 50 Let Kievsk. Polnekhi. In-Ta. Kiev. 1948 S. 535-42(?547-54)

SO: Letopis' Zhurnal'nykh Statey, Vol. 34, 1949 Moskva

AKALOVSKIY, I. V.

Akalovskiy, I. V. - "A method for determining the phase and amplitude relationships between the oscillations in two vibrators," Sbornik nauch.-tekhn. statey (Akad. nauk Ukr. SSR, In-t elektrotekhniki), Issue 2, 1948, p. 99-109

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

AKALOVSKII, I. V.

"Study of the Mutual Synchronization of Two Self-Excited Oscillatore by the Method of Generalized Phase-Frequency Diagrams", Radio, No. 3, p 15, 1950.

VOLLERNER, Naum Filippovich, doktor tekhn.nauk; AKALOVSKIY, I.V. [Akalovs'kyi, I.V.], kand.tekhn.nauk, glavnyy red.; VER, A.Ya., red.

[Present-day radio electronics] Suchasna radioelektronika. Kyiv, 1959. 43 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.5, no.17) (MIRA 13:1)
(Radio)

06357
SOV/142-2-4-10/26

AUTHOR: Akalovskiy, I.V.

TITLE: A Phasochronous Oscillator With Combined Interaction

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1959, Vol 2, Nr 4, pp 454-461 (USSR)

ABSTRACT: Phasochronous oscillators were suggested by S.I. Tetel'baum. They are based on the effective, multiple energy exchange between an electron flow and a magnetic field. The energy exchange takes place during equality of the phase velocity of a sequence of charged particles and the phase velocity of a wave [Ref 1, 2, 3]. One of the simplest phasochronous oscillators is the one with transverse interaction. Here, the electrons move in crossed electrical and magnetic fields along a non-delaying waveguide system with approximately trochoidal trajectories. Direct and inverse wave phasochronous oscillators are principally possible and the author discusses both types. He explains the kinematics of electron motion without taking into consideration the

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A Phasochronous Oscillator With Combined Interaction

volume charge. He discusses ways of reducing the magnetic induction in devices of this type. Direct wave phasochronous oscillators with combined interaction permit a smaller clearance between the waveguide electrodes with a corresponding selection of the degree of wave delay, compared to analogous oscillators with purely transverse interaction (without delay of the wave). The frequency range of the phasochronous oscillators may be increased towards the higher frequencies with permissible magnetic induction values. In inverse wave phasochronous oscillators, the magnetic field induction may be reduced, using such an operating condition that during one cyclotron frequency cycle the electrons will interact with several cycles of the high-frequency field. The efficiency of the energy exchange is higher in an oscillator with combined interaction, compared to analogous oscillators with transverse interaction working under the same operating conditions. A sorting of the electrons is observed in direct and in-

A Phasochronous Oscillator With Combined Interaction

verse wave phasochronous oscillators with combined interaction, since electrons are drained to the cathode. The electrons obtain energy in the high-frequency field which is conventional for analogous oscillators with transverse interaction. However, contrary to the latter, in oscillators with combined interaction, there is a mechanism for longitudinal grouping of electrons to clusters. Further, a mechanism is provided, which facilitates a faster draining of electrons towards the cathode electrode, which are not in a correct phase. In case the phase is correct, a slower departure of the electrons is provided from the zone of the intensive high-frequency field which is adjacent to the anode electrode. These phenomena increase the effectiveness of energy exchange in oscillators with combined interaction. The publication of this paper was recommended by the Institut elektrotekhniki AN USSR (Institute of Electrical Engineering of the AS UkrSSR). There are 2 diagrams 3 graphs and 3 Soviet references.

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06357
SOV/142-2-4-10/26

A Phasochronous Oscillator With Combined Interaction

SUBMITTED: February 11, 1959

Card 4/4

AKALOVSKIY, I.V. [Akalovs'kyi, I.V.], kand.tekhn.nauk

From Popov to the present. Nauka i zhyttia 9 no.3:16-21 Mr '59.
(MIRA 12:4)

(Radio) (Television)

AKALOVSKIY, I. [Akalovs'kyi, I.]

Omnipresent waves. Znan. ta pratsia no. 3:6-8 Mr '61.
(MIRA 14:5)

1. Direktor Instituta radiotekhnicheskikh problem AN USSR.
(Radio waves)

AKALOVSKIY, I.V. [Akalovs'kyi, I.V.], kand.tekhn.nauk

Important problems in radio engineering. Nauka i zhyttia 11 no.1:19-21 Ja '61. (MIRA 14:3)

1. Direktor Instituta radiotekhnicheskikh problem AN USSR.
(Radio) (Ultrasonic waves)

Z/037/62/000/005-6/044/049
E192/E382

AUTHOR: Akalovskiy, I.V.

TITLE: Kinetics of the electron motion in a phasochronous oscillator with combined interaction

PERIODICAL: Československý časopis pro fysiku, no. 5-6, 1962, 691 - 697

TEXT: One of the simplest types of phasochronous oscillator is a device with transverse interaction, where the electrons move in mutually perpendicular electric and magnetic fields in the direction of a waveguide system with no delay. Such oscillators can operate with forward and backward waves. The electrons interact with the field of a travelling wave whose electric field is perpendicular to the motion of the electrons. The conditions of the energy-exchange between the electrons and the field of the wave can be expressed by:

$$v_f = v_z \frac{\omega}{\omega - \Omega} \qquad (1)$$

in the case of a forward wave and by:

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Kinetics of ....

$$v_f = v_z \frac{\omega}{\Omega - \omega} \qquad (2)$$

in the case of a backward wave. In Eqs. (1) and (2), v_f is the phase-velocity wave, v_z the mean velocity of the electrons, ω the angular frequency of the wave and Ω is the cyclotron frequency of the electrons. Since:

$$v_z = \frac{E_o}{B} \quad \text{and} \quad \Omega = \frac{e}{m} B ,$$

where E_o is the electric field and B is the magnetic induction in the interaction space, it is possible to evaluate from Eq. (1) B necessary for the operation of the system as a forward-wave oscillator. The required magnetic induction is:

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$$B = \frac{m\omega}{2e} = \left[1 \pm \sqrt{\left(1 - 4\frac{eE_o}{m\omega\beta c}\right)}\right] \qquad (3)$$

where $\beta = v_f/c$, where c is the velocity of light. Eq. (3) shows that for given E_o and β there is a maximum wavelength at which the device can operate. It appears also that the frequency of the oscillator with a non-delayed wave can be increased by varying B . However, this leads to an increase in the amplitude of the cyclotron oscillations of the electrons. It is therefore necessary to use a delay system and it appears that the most successful delay devices are in the form of periodic waveguides. In the case of a backward-wave oscillator the required B can be evaluated from Eq. (2). The electric field contains longitudinal as well as normal transverse components in oscillators with delay systems. The electrons therefore interact with the two components and the phase velocity is given by:

$$v_f = v_z \frac{\omega}{n\Omega - \omega} \qquad (13)$$

where n is an integer. The required magnetic induction for this case is given by:

$$B = \frac{m\omega}{2en}\left[1 + \left(1 + 4n\frac{eE_o}{m\omega\beta c}\right)\right]$$

There are 4 figures.

ASSOCIATION: Ústav radiotechnických problémů AV SSSR, Kijev
(Institute of Radioengineering Problem AS USSR, Kiev)

AKALOVSKIY, I. [Akalovs'kyi, I.], kand.tekhn.nauk

"Magic" electron. Nauka i zhyttia 12 no.1:29-31 Ja '62. (MIRA 15:2)

1. Direktor Instituta radiotekhnicheskikh problem AN USSR.
(Electronics)

TARANENKO, Vadim Pavlovich, kand. tekhn. nauk; AKALEVICH, I.V., kand. tekhn. nauk, retsenzent

[Electron guns] Elektronnye pushki. Kiev, Tekhnika, 1964. 178 p. (MIRA 18:1)

TARANENKO, Zoya Il'inichna, kand. tekhn. nauk; TROKHIMENKO, Yaroslav Karpovich, kand. tekhn. nauk; AKALOVSKIY, I.V., kand. tekhn. nauk, retsenzent

[Delay systems] Zamedliaiushchie sistemy. Kiev, Tekhnika, 1965. 306 p. (MIRA 19:1)

AKALUNIN, S.A.

KULIKOVSKIY, Aleksandr Aleksandrovich; BOLOSHIN, Igor' Aleksandrovich; POTRYASAY, Vladimir Filippovich; AKALUNIN, S.A., redaktor; CHERNOV, V.S., tekhnicheskiy redaktor

[Principles in teaching radio receiver design] Osnovy uchebnogo proektirovaniia radiopriemnikov. Pod obshchei red. A.A.Kulikovskogo. Moskva, Gos. energ. izd-vo, 1956. 327 p. (MLRA 10:1)
(Radio--Receivers and reception)

AKALUNIN, S.A.

Mazel', K.B., Candidate of Tech. Sciences

Teoriya i raschet vypryamitelya, rabotayushchego na yemkost', s uchetom induktivnosti rasseyaniya transformatora (Theory and Calculation of a Rectifier With a Capacitive Load, Corrected for Leakage Inductance of the Transformer) Moscow, Gosenergoizdat, 1957, 39 pp. 10,000 copies.

Ed.: Akalunin, S.A.; Tech. Ed.: Voronin, K.P.

PURPOSE: To present a simplified engineering calculation method in designing rectifier installations with a capacitive load.

COVERAGE: The author investigates the theory of the operation of a rectifier with a filter which has a capacitive response. He calculates the influence of resistance and of leakage inductance of the anode transformer. In order to simplify complicated formulae, the author reduced these formulae into a series of graphs. Simplified auxiliary relations

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Theory and Calculation of a Rectifier With a Capacitive Load (Cont.)

make it possible to find approximate values of resistance and reactance of the anode transformer. The divergence between the experimental and calculated data have been reduced to practically admissible values. The author thanks Prof. Tsykin, G.S. for frequent valuable advice and suggestions given him during his work. He mentions Prof. Aseyev, B.P. (p. 4) as the originator of the engineering method of calculating capacitively loaded rectifiers, Prof. Terent'yev, B.P. (pp. 5,6,26 and 27) and Prof. Tsykin, G.S. (p. 5) as those who further developed the method without, however, considering leakage inductance of the transformer. There are 15 references, of which 14 are Soviet and 1 is a translation.

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Theory and Calculation of a Rectifier With a Capacitive Load (Cont.)

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Theory and Calculation of a Rectifier With a Capacitive Load (Cont.)

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AKALUMIN, S.A.

MARGOLIN, Mikhail Grigor'yevich, kand.tekhn.nauk; AKALUMIN, S.A., red.; MEDVEDEV, L.Ya., tekhn.red.

[Powerful electron-tube amplifiers] Lapovyi usilitel' moshchnosti; analiz i raschet. Moskva, Gos.energ. izd-vo, 1957. 109 p. (MIRA 11:2)
(Amplifiers, Electron-tube)

AKALUNIN, S.A.

EFRUSSI, Ya.I.; AKALUNIN, S.A., red.; LARIONOV, G.Ye., tekhn.red.

[Intermediate-frequency amplifiers for television] Usiliteli promezhutochnoi chastoty dlia televizorov. Moskva, Gos.energ. izd-vo, 1957. 127 p. (MIRA 11:2)
(Amplifiers, Electron-tube)

APUKHTIN, Gennadiy Il'ich; AKALUNIN, S.A., redaktor; LARIONOV, G.Ye., tekhnicheskiy redaktor

[Technology of soldering joints in instrument building] Tekhnologiia paiki montazhnykh soedinenii v priborostroenii. Moskva, Gos. energ. izd-vo, 1957. 174 p. (MLRA 10:5)
(Solder and soldering)

MAYOROV, Aleksandr Stepanovich; AKALUNIN, S.A., red.; FRIDKIN, A.M., tekhn. red.

[Manual of frequency characteristics of the Q-factor of inductance coils with SB-type armored cores] Al'bom chastotnykh kharakteristik dobrotnosti katushek induktivnosti na bronevykh serdechnikakh tipa SB. Moskva, Gos. energ. izd-vo, 1958. 39 p. (MIRA 11:8)
(Induction coils)

STEPANENKO, I.P., dots., kand. tekhn. nauk, red.; AKALUNIN, S.A., red.; CHERNOV, V.S., tekhn. red.

[Use of transistors in electronic equipment; a collection of scientific papers] Ispol'zovanie poluprovodnikovykh priborov v uzlakh elektronnoi apparatury; sbornik nauchnykh rabot. Pod red. I.P. Stepanenko. Moskva, Gos. energ. izd-vo. 1958. 175 p. (MIRA 11:7)

1. Moscow. Moskovskiy inzhenerno-fizicheskiy institut. Kafedra elektroniki.

(Transistors)

AKALUNIN, S.A.

KULIKOVSKIY, Aleksandr Aleksandrovich; AKALUNIN, S.A., red.; FRIDKIN, A.M., tekhn.red.

[Linear stages of radio receivers] Lineinye kaskady radiopriemnikov. Moskva, Gos. energ. izd-vo, 1958. 350 p. (MIRA 11:5)
(Radio--Receivers and reception)

FILIMONOV, G.F., kand.fiziko-matemat.nauk [translator]; TRENEVA, S.N., kand.tekhn.nauk [translator]; AYZIKS, Yu.D., inzh. [translator]; OVCHAROV, V.T., red.; AKALUNIN, S.A., red.; VORONIN, K.P., tekhn.red.

[Traveling-wave tube; translated articles] Lampa s begushchei volnoi; sbornik perevodnykh statei. Moskva, Gos.energ.izd-vo, 1959. 150 p. (MIRA 13:1)
(Traveling-wave tubes)

YEL'YASHKEVICH, Samuil Abramovich; KANAYEVA, A.M., retsenzent; AKALUNIN, S.A., red.; VORONIN, K.P., tekhn.red.

[Manual on television receivers] Spravochnik po televizionnym priemnikam. Moskva, Gos.energ.izd-vo, 1959. 191 p. (MIRA 12:5)
(Television--Receivers and reception)

DANILIN, B.S.; NILENDER, R.A., prof., red.; AKALUNIN, S.A., red.; BORUNOV, N.I., tekhn.red.

[Design of vacuum units] Konstruirovanie vakuumnykh sistem. Pod red. R.A.Nilendera. Moskva, Gos.energ.izd-vo, 1959. 271 p. (MIRA 12:8)

(Vacuum apparatus)

DZHIGIT, I.S., prof., red.; SOLOV'YEV, Ye.G., kand.tekhn.nauk, red.; AKALUNIN, S., red.; LARIONOV, G.Ye., tekhn.red.

[Transactions of the Congress on Ultra-High Frequency Electronics] Trudy Konferentsii po elektronike SVCH. Pod red. I.S.Dzhigita i E.G.Solov'eva. Moskva, Gos.energ.izd-vo, 1959. 271 p. (MIRA 12:9)

1. Konferentsiya po elektronike SVCh, Moscow, 1957.
(Electronics)

AZ'YAN, Yu.M.; BERESTOVSKIY, G.N.; KAPTSOV, L.N.; RZHEVKIN, K.S.; SENATOROV, K.Ya.; MIGULIN, V.V., prof., red.; AKALUNIN, S.A., red.; LARIONOV, G.Ye., tekhn.red.

[Transistor triodes in circuits with regenerative feedback] Poluprovodnikovye triody v regenerativnykh skhemakh. Pod red. V.V. Migulina. Moskva, Gos.energ.izd-vo, 1959. 311 p. (MIRA 12:11)
(Transistor circuits) (Feedback (Electronics))

AKAMAN, S.F., inzh.; RYABKO, L.P., inzh.

Repair of a VTN 15,000 kv.-a. turbogenerator. Elek sta. 30 no.2: 82-83 F '59. (MIRA 12:3)
(Turbogenerators--Maintenance and repair)

POSTNIKOV, I.M., doktor tekhnicheskikh nauk, professor; AKAMENKO, A.I., inzhener.

Parameters of an equivalent circuit and an accurate circle diagram of an asynchronous machine. Elektrichestvo no.12:25-28 D '55. (MLRA 9:3)

1. Institut elektrotekhniki Akademii nauk USSR.
(Electric machinery)

AGRANAT, V.F., inzh.; POTAPOV, I.G., inzh.; AKAMOVA, P.I., inzh.

Results of the use of capron wastes for the fabrication of ship fittings. Sudostroenie 30 no.8:43-47 Ag '64. (MIRA 18:7)

POLIKARPOV, G.G.; AKAMSIN, A.D.

Experimental study of yttrium absorption by marine algae, actinias, and sea bottoms. Trudy SBS 13:299-301 '60. (MIRA 14:3)
(Yttrium—Isotopes) (Marine biology)
(Submarine geology)

AKAMSIN, A.D.

Absorption of cesium by certain bottoms from aqueous solutions with different concentrations of sodium, potassium, magnesium, and calcium. Trudy SBS 13:302-304 '60. (MIRA 14:3)
(Cesium--Isotopes) (Submarine geology)

AKAMSIN, A.D.

Distribution of P^{32}, S^{35}, Sr^{90}, Y^{91}, and Ce^{144} between sea water and the ground under experimental conditions. Trudy SBS 14: 309-313 '61. (MIRA 15:4)

(Black Sea--Radioisotopes)

AKAMSIN, G.; POGORELOV, V.

First All-Russian flour milling exhibition. Muk.-elev. prom. 30 no.3:31 Mr '64. (MIRA 17:4)

1. Mel'nichnyy kombinat, Kaluga.

L 26542-66 EWT(m) RM

ACC NR: AP6017360 SOURCE CODE: UR/0062/66/000/003/0493/0498

AUTHOR: Akamsin, V. D.; Rizpolozhenskiy, N. I.

ORG: Chemical Institute im. A. Ye. Arbuzov, AN SSSR (Khimicheskiy institut AN SSSR); Institute of Organic Chemistry, AN SSSR, Kazan' (Institut organicheskoy khimii AN SSSR)

TITLE: Trivalent phosphorus thioacid esters. Report 1. Esters of ethyldithiophosphinous, ethylphenylthiophosphinous, and diethylthiophosphinous acids

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 3, 1966, 493-498

TOPIC TAGS: ester, mercaptan, alkylphosphine, chlorinated organic compound

ABSTRACT: By treating mercaptans with ethyldichlorophosphine, phenylethylchlorophosphine, and diethylchlorophosphine, the corresponding alkyl esters of ethyldithiophosphinous, ethylphenylthiophosphinous, and diethylthiophosphinous acids were obtained. The addition of sulfur to these esters produced the alkyl esters of ethyltrithiophosphinic, phenylethyldithiophosphinic and diethyldithiophosphinic acids. The interaction of acyl halides with the esters of ethyldithiophosphinous acid was studied using the diethyl ester of ethyldithiophosphinous acid as an example. A total of 22 compounds were synthesized and characterized. Orig. art. has: 4 tables. [JPRS]

SUB CODE: 07 / SUBM DATE: 25May64 / ORIG REF: 004 / OTH REF: 001

Card 1/1 UDC: 542.91+661.718.1+661.719

ACC NR: AP7005111 SOURCE CODE: UR/0020/66/168/004/0807/0809

AKANSIN, V. D., RIZPOLOZHENSKIY, N. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR (Institut organicheskoy i fizicheskoy khimii AN SSSR)

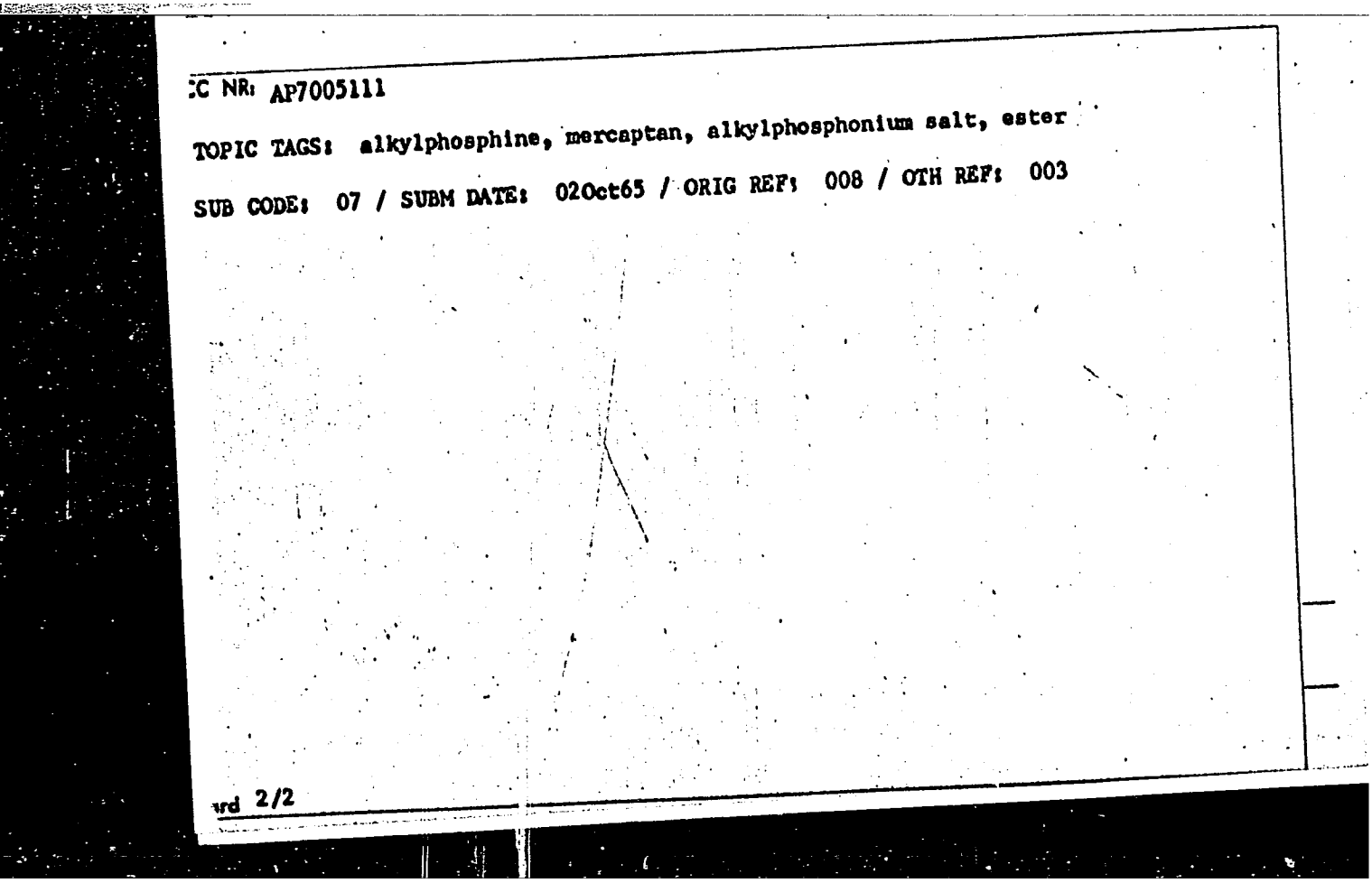
"Esters of Diethylthiophosphinous Acid"

Moscow, Doklady Akademii Nauk SSSR, Vol 168, No 4, 1966, pp 807-809

Abstract: Esters of diethylthiophosphinous acid were produced by the reaction of diethylchlorophosphine with mercaptans in the presence of triethylamine in dry ether medium at reduced temperature. All the synthesized esters added sulfur exothermally, forming esters of diethyldithiophosphinic acid. In a calculation of the molecular refractions of the esters of diethyldithiophosphinic acid on the basis of the literature values of the atomic refractions of sulfur and phosphorus, a consistent discrepancy was obtained. Under the action of alkyl halides (ethyl iodide, benzyl bromide, methyl iodide), the ethyl ester of diethylthiophosphinous acid isomerized to an alkyldiethylphosphine sulfide, yielding an alkyltriethylphosphonium halide as a side product. Intermediate products of the Arbuzov rearrangement: addition products of alkyl halides to the ethyl ester of diethylthiophosphinous acid were isolated. Thermal decomposition (110-120°) of the addition product of benzyl bromide to the ethyl ester of diethylthiophosphinous acid produced benzyldiethylphosphine sulfide in 82% yield. Esters of diethylthiophosphinous acid reacted with chloral, but no individual reaction products could be isolated. Orig. art. has: 3 formulas and 3 tables. [JPRS: 38,970]

UDC: 547.241 + 661.718.1

Card 1/2



ACC NR: AP7005111

TOPIC TAGS: alkylphosphine, mercaptan, alkylphosphonium salt, ester

SUB CODE: 07 / SUBM DATE: 02Oct65 / ORIG REF: 008 / OTH REF: 003

Card 2/2

AUTHOR: Akansyev, B. A.; Akhmanov, S. A.; Khokhlov, R. V.

TITLE: Amplification of coherent light by means of stimulated Raman scattering

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 1, no. 4, 1965, 4-9, and insert facing p.

TOPIC TAGS: coherent radiation, stimulated Raman scattering, Raman effect laser, Q spoiled laser, ruby laser

ABSTRACT: Preliminary experimental results are presented for the amplification of an external signal by means of the stimulated Raman scattering (SRS) effect. The equipment used is shown in Fig. 1 of the insert. Generation and amplification of the SRS component was accomplished in the same cavity, which consisted of two glass tubes, each 20 mm in diameter crossed at a 90° angle and half-filled with benzene. The cuvette was placed inside a cavity formed by a KS-19 filter ruby laser. Resonator mirrors 1 and 2 were 98% reflective at wavelengths from 6900 to 7500 Å. The beam reflected by mirror 2 contains the Stokes and Rayleigh components. One portion of the beam, having been reflected partially from semi-transparent mirrors 3 and 4 (~40% reflective at 6900—7500 Å) and having traveled

Card 1/3

L 53580-65
ACCESSION NR: AP5014220

through the air in the cuvette, enters the upper part of the spectrograph slit. The second portion of the beam passes through mirror 3. After it is reflected by aluminum mirrors 5 and 6 (90% reflective) and passes through semitransparent mirror 4 and the lower portion of K (through [illegible]), the [illegible] portion enters the upper part of the spectrograph slit. [illegible] split [illegible] beams, one of which travels through benzene, the other through air. The gain is determined by comparing the intensity of Stokes and [illegible] components in both beams. It was found that with a fixed [illegible] of the cuvette, gain increased (from [illegible] times) with an increase in the pumping power. The [illegible] experiments indicate the possibility of a coherent light receiver based on the SRS. Such a pickup would be more sensitive (at least by one order of magnitude) than one using a ruby laser since the line half width from a ruby laser is one order of magnitude wider than the typical Raman scattering lines. Orig. art. has: 1 table and 2 figures. [YK]

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

SUBMITTED: 06Apr65 ENCL: 01 SUB CODE: EC,OP
NO REF SOV: 003 OTHER: 005 ATD PRESS: 4015

Card 2/3

L 53580-65
ACCESSION NR: AP5014220

ENCLOSURE: 01

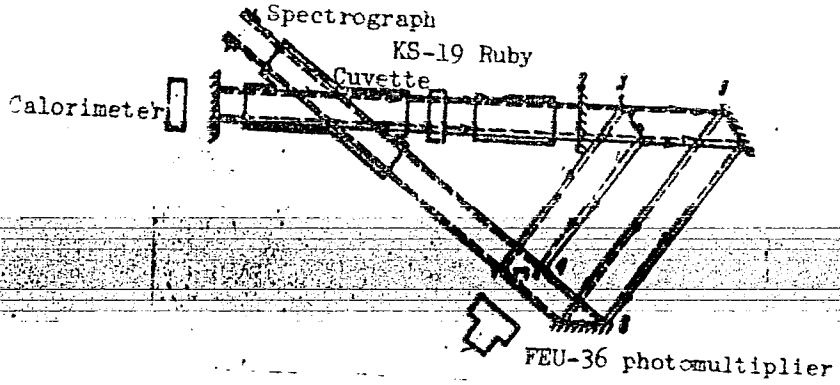


Fig. 1. Equipment used in the experiments

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L 20640-66 EWT(1)/EWP(e)/EWT(m)/T IJP(c) WW/GG/WH

ACC NR: AP6012188 SOURCE CODE: UR/0386/66/003/008/0327/0329

AUTHOR: Akanayev, B. A.; Petselt, Ya.

ORG: Physics Department, Moscow State University im. M. V. Lomonosov (Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta)

TITLE: Parametric interaction of infrared waves in a medium in which intense molecular oscillations are excited

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 8, 1966, 327-329

TOPIC TAGS: hydrogen, ruby laser, laser application, ir phenomenon, ir spectrum, parametric converter, molecular interaction

ABSTRACT: Preliminary results are reported of an experiment aimed at observation of parametric light interaction in the far infrared region (Fig. 1). The pumping was with intense molecular oscillations (excited by using stimulated Raman scattering (SRS), in the visible part of the spectrum). Coherent molecular oscillations were excited in hydrogen at 130 atm by the focused beam of a Q-switched ruby laser of 100 Mw power and 15 nsec pulse duration (when SRS was produced in the working medium). One of the interacting infrared waves was the third Stokes component of the SRS in hydrogen. The parametric-interaction effect was registered by means of

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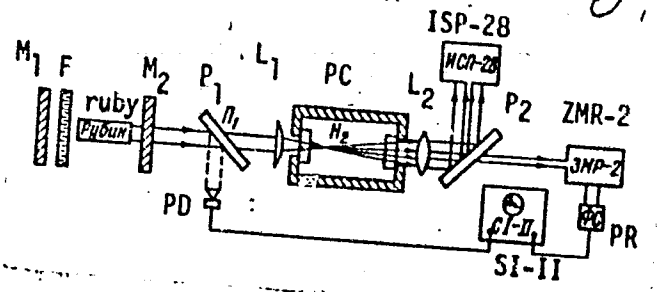

Fig. 1. Block diagram of the experimental setup

M_1 and M_2 - Resonator mirros; P_1 - plane-parallel glass plate; L_1 - quartz lens; L_2 - fluorite lens; PC - chamber with hydrogen; PD - photodiode; ISP-28 - quartz spectrograph; P_2 - plane-parallel germanium plate; ZMR-2 - mirror monochromator with LiF prism; PR - photoresistor of germanium doped with gold; SI-II - high speed oscilloscope.

a monochromator, to the output of which was connected a germanium photoresistor doped with gold. The signal from the photoresistor was further fed to a high-speed oscilloscope. Pulses of infrared radiation with wavelengths 4.50 and 5.16 μ (corresponding to the difference frequency and to the third Stokes frequency) were recorded with approximately identical intensity, demonstrating the sufficiently large parametric interaction. The weakness of the dispersion, and by the same token the large coherent-interaction length, are evidenced by observation of 5 lines in the

6

anti-Stokes region: 5388, 4403, 3723, 3217, and 2844 Å, the local intensity of the fifth anti-Stokes line amounting in the best case to 5% of the intensity of the first anti-Stokes line. It is concluded that self-excitation at infrared frequencies by selecting resonators for these frequencies is feasible. The authors thank I. L. Fabelinskiy and his co-workers for supplying the pressure chamber, D. P. Krindach and V. Samomatin for help with the experiment, and S. A. Akhmanov, V. T. Platonenko, and R. V. Khokhlov for interest, advice, and a discussion of the results. Orig. art. has: 1 figure and 2 formulas. [02]

SUB CODE: 20/ SUBM DATE: 01Mar66 ORIG REF: 003/ OTH REF: 001
ATD PRESS: 4225

AKAPOV, A.; DANILYUK, V.

Improve the dissemination of military science. Voen. znan. 33 no.4:20 Ap '57. (MLRA 10:6)

(Military education)

POLYAKOV, I.S.; LEBEDEV, M.G.; AKARO, I.L.

Standard technological processes in the production of forged pieces for the journal of an automobile rotating cam. Kuz.-shtam. proizv. 7 no.2:5-11 F '65. (MIRA 18:4)

NORITSYN, I.A., doktor tekhn.nauk, prof.; GOLOVIN, V.A., kand.tekhn.nauk, dotsent; AKARO, I.L., inzh.

Heat release during die forging and pressing. Vest.mashinostr. 45 no.9:59-64 S '65. (MIRA 18:10)

AKARO, I.L.

Laboratory equipment providing for a constant rate of deformation.
Kuz.-shtam.proizv. 5 no.4:27-29 Ap '63. (MIRA 16:4)
(Power presses) (Hodograph)

POLYAKOV, I.S., inzh.; AKARO, I.L., inzh.

Stamping in closed dies on crank presses. Vest. mashinostr. 44 no.9:62-66 S '64. (MIRA 17:11)

AKASTELOV, A.I.; MEL'NIKOVA, R.N.; SPITSIN, V.I.

Ultrasonic cleaning of tire tube valves. Kauch. i rez. 23 no.9: 49-50 S '64. (MIRA 17:11)

1. Dnepropetrovskiy shinnyy zavod.

AKATNOV, I.N.

BOBROV, A.R.; SIBIRYAKOV, A.A.; AKATNOV, I.N.; BIL'DE, A.E.; KOZIN, A.I., GROSMAN, I.S.; BASKAKOV, A.I.; YATSYSHIN, A.M.; TRUNOV, A.F.; KUTUZOV, N.L.; VICHIK, Ya.B.; CHUMBAROVA, A.A.; PRYAKHIN, R.I.; ZINOV'YEV, N.I.; MIKHAYLOVA, S.I.

Georgii Alekseevich Uarov. Muk.-elev.prom. 21 no.1:31 Ja '55. (Uarov, Georgii Alekseevich, 1898-1954) (MLRA 8:5)

AKATNOV, I. N.

USSR/General Problems. Methodology, History, Scientific Institutions and Conferences, Instruction, Questions Concerning Bibliography and Scientific Documentation. A

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3459.

Author : I.N. Akatnov.
Inst :
Title : Development of Leningrad Milling and Combined Food Industry and Its Part in Technical Progress.

Orig Pub: In symposium: Pishchevaya prom-st'. L., Sel'khozgiz, 1957, 42-59.

Abstract: No abstract.

Card : 1/1 -10-

KOZIN, A.I.; TRUNOV, A.F.; SOVENKO, P.S.; YEGOROVA, Ye.I.; AKATNOV, I.N.; KOLUSHEV, V.I.; PANASENKO, L.I.; KATS, A.R.; AKSENOV, T.Ye.; LYUBIN, S.G.; SOSNER, S.Ye.; RYABININ, M.M.; MEL'NIKOV, P.N.; KLYUSHINA, L.T.; KUTUZOVA, M.G.; GOLOVNYA, V.S.; IVANOV, A.F.; SINEV, I.I.

I.A. Danilov; obituary. Muk.-elev. prom. 26 no. 12:26 D '60. (MIRA 13:12)

(Danilov, Ivan Aleksandrovich, d. 1960)

AKANTOV, N.I.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1499
AUTHOR AKANTOV,N.I., SABAJTIS,JU.I.
TITLE Measuring Curl Derivations by the Method of Self-Oscillation.
PERIODICAL Žurn.techn.fis, 26, fasc.9, 2049-2056 (1956)
Issued: 10 / 1956 reviewed: 10 / 1956

The curl derivation of the moment is called the coefficient of the angular velocity of a rotating body moving in a liquid if the moment of hydrodynamic forces acting upon the body is decomposed by means of TAYLOR'S series. The experimental determination of curl derivations is necessary for the examination of the stability of aircraft and ships. At present two methods exist for this purpose: that of free and that of enforced oscillations. Both are characterized by marked disadvantages. The first method is inaccurate and requires a long time, the second, though very simple as to its idea, is nevertheless very complicated from the experimental point of view. The basic difficulty consists in the maintenance of the frequency of the exterior force. The resonance peak is in most cases pointed, and a slight modification of frequency causes the oscillation to leave the domain of resonance. It is nearly impossible to eliminate these fluctuations of frequency. For this reason the method of self-oscillations was worked out in the laboratory for aerodynamics of the Leningrad Polytechnic Institute. The necessary plant is described. The system can oscillate round an axis and the latter is connected with the axis of the rotor of an electromotor by means of levers. By leading a low frequency alternating current into the electromotor it is possible to generate oscillations in the

Žurn.tech.fis,26, fasc.9, 2049-2056 (1956) CARD 2 / 2 PA - 1499

system. In order that the system can work in resonance the alternating current must have the same frequency as the oscillating system, but it must be shifted by $\frac{\pi}{2}$ in the phase. Next, the expression for the amplitude of the self-oscillations, expressed by the parameters, is sought. Dry friction and self-induction are neglected. The solution obtained by computation coincides exactly with that which would be obtained for the case of the oscillations of the system under the effect of the sinusoidal fluctuation moment under resonance conditions. As is shown by the approximated computations and many experiments, the curl derivations are linear functions of velocity. This property is utilized for the purpose of finding the curl derivation for the extinction coefficients. In conclusion it is said that experiments had proved the applicability of the method of self-oscillations in a satisfactory manner.

INSTITUTION: Leningrad Polytechnic Institute "KALININ".

PHASE I BOOK EXPLOITATION SOV/3193

10(3,4)

Leningrad. Politekhnicheskiy institut imeni M.I. Kalinina

Trudy, no. 198] Tekhnicheskaya gidromekhanika (Industrial Hydromechanics) Moscow, Mashgiz, 1958. 220 p. Errata slip inserted. 1,500 copies printed.

Resp. Ed.: V.S. Smirnov, Doctor of Technical Sciences, Professor; Ed. of this book: L.G. Loytsyanskiy, Doctor of Physical and Mathematical Sciences, Professor; Managing Ed. for Literature on the Design and Operation of Machinery (Leningrad Division, Mashgiz): F.I. Fetisov, Engineer; Tech. Ed.: R.G. Pol'skaya.

PURPOSE: This book is intended for engineers working in the field of machine construction.

COVERAGE: This collection of articles contains the results of original work in the field of theoretical and applied hydroaerodynamics, completed in the aerodynamics laboratory of the LPI (Leningrad Polytechnic Institute) by members of the department of hydroaerodynamics and the department of theoretical mechanics. The book is divided into four parts. The first part contains studies of turbine steam-exhausts. The first article gives the results of a laboratory study on model-experiments on a test-stand and the general conclusions drawn therefrom. The second part contains articles on the theory of laminar and turbulent motion of a viscous fluid. The articles treat the hydrodynamic theory of friction in bearings and suspensions, boundary layers and jets, the initial part of a pipe in the presence of vortex, and the motion of air under the action of a corona conductor. The articles in the third part belong to the field of applied hydrodynamics. One of the articles is a theoretical and experimental study of flow around the parts of a radar antenna. The second article contains the results of aerodynamical analyses of fish-net models. The fourth part of the book contains the results of laboratory experiments on establishing new methods of aerodynamical measurements (friction forces on the surface of a streamlined body, pressure distributions in nonstationary flows). References accompany individual articles.

AKATNOV, N.I.

Spreading of a flat turbulent jet along a solid wall. Trudy LPI no.198:151-159 '58. (MIRA 12:12)
(Jets--Fluid dynamics) (Turbulence)

AKATNOV M.I.

10(2) PHASE I BOOK EXPLOITATION SOV/2271

Soveshchaniye po prikladnoy gazovoy dinamike. Alma-Ata, 1956

Trudy (Transactions of the Conference on Applied Gas Dynamics) Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1959. 235 p. Errata slip inserted.

Sponsoring Agency: Kazakhskiy gosudarstvennyy universitet imeni S.M. Kirova.

Ed.: V.V. Aleksandriyskiy, Tech. Ed.: Z.P. Rorokina; Editorial Board: L.A. Vulis (Resp. Ed.), V.P. Kashkarov, T.P. Lamt'yeva, and B.P. Ustimenko.

PURPOSE: This book should be of interest to scientists and engineers working on problems of applied gas dynamics and may be of use to students.

COVERAGE: This book presents reports and brief summaries of the discussions which took place at the Conference on Applied Gas Dynamics in Alma-Ata in October 1956. The conference was subdivided into three areas of applied gas dynamics: jet flows of fluids and gases, the aerodynamics of heating processes, and the discharge of a fluid. The practical value of the "Transactions of the Conference" consists in the development of theory, methods of technical calculation and methods for systematic measurement applied to heating, furnace, and other industrial processes for which, in most cases, aerodynamic phenomena are decisive factors.

AKATNOV, N. I. (Leningrad)

"The Propagation of a Point Source Flow Along a Wall in the Presence of a Uniform Flow."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

AKATNOV, N.I., Cand Phys-Math Sci (diss) "Distribution of laminar and turbulent streams along a solid surface." Leningrad, 1960, 13 pp (Physico-technical Institute, AS USSR) (KL, 34-60, 119)

69293
S/179/60/000/01/004/034
E031/E535

10.4000

AUTHOR: Akatnov, N. I. (Leningrad)

TITLE: The Spreading of a Plane Turbulent Stream Along Hard, Smooth and Rough Surfaces

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, Nr 1, pp 27-32 (USSR)

ABSTRACT: The theoretical solution of the problem of a turbulent stream spreading along a smooth surface has been found by Glauert (Ref 1) and the author (Ref 2). Ref 1 is based on the Blasius resistance law for pipes and so the results are only valid for Reynolds numbers $\leqslant 10^5$. The solution given in Ref 2 gives a rough description of the process occurring in reality. A logarithmic resistance law is the basis of the present paper and the solution is thus valid for Reynolds numbers up to 10^9. The solution is generalized to the case of a rough surface. In addition to the boundary conditions it is usual to introduce some conservation law to describe the intensity of the stream, but here the author chooses to take

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69293
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E031/E535

The Spreading of a Plane Turbulent Stream Along Hard, Smooth and Rough Surfaces

$u_m = u_{mo}$ for $x = x_o$, where u_m is the maximum velocity at the given section. In virtue of the resistance law chosen the velocity profile is logarithmic and depends on three parameters, u_m, δ_m - the value of y at the point of maximum velocity and δ - the distance of the point where maximum velocity occurs to the point at which the velocity is half its maximum value. These parameters depend on x (measured along the plate) and their values are found by transforming the initial differential equations into integral relations and substituting into these the velocity and friction stress profiles. Thus three ordinary differential equations are obtained. To find their solution δ and δ_m are taken as proportional to x and u_m proportional to $x^{1/2}$, the coefficients of proportionality involving power series in $\varepsilon = (0.5c_f)^{1/2}$. In the same way a solution may be found for the case of a rough surface and the final expressions for u_m, δ and δ_m are very similar.

Card 2/3

69293

S/179/60/000/01/004/034
E031/E535

The Spreading of a Plane Turbulent Stream Along Hard, Smooth and Rough Surfaces

The theoretical results are compared with experimental values. The semi-empirical theory developed is shown to be in qualitative agreement with experiment, but the data do not permit verification of the effect of Reynolds number on u_m, δ and δ_m since the experiments did not cover a wide range of Reynolds numbers.
There are 4 figures and 9 references, 6 of which are Soviet, 1 German and 2 English.

SUBMITTED: October 15, 1959

Card 3/3

77994
SOV/40-24-1-22/28

AUTHOR: Akatnov, N. I. (Leningrad)

TITLE: Application of the Mises' Variables to the Problem of Spreading of the Flow of Laminar Jet Along a Wall

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ABSTRACT: The boundary layer equations as given by von Mises:

$$\frac{\partial u}{\partial \xi} = \nu \frac{\partial}{\partial \Psi}\left(u \frac{\partial u}{\partial \Psi}\right) \qquad \left(\xi = x, \ldots, \Psi = \int_0^y u\,dy\right) \qquad (1.1)$$

are used to solve the problem of the flow of a jet along one side of a semi-infinite plate wherein the jet comes from an infinitely thin slot source inserted in the tip of the plate. The jet stream is regarded as a laminar flow with zero pressure gradient. The surrounding space is assumed to be filled with the

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same fluid and to form a companion jet, i.e., it flows with constant speed $u = u_0$ in the same direction as the jet. Here, Ψ is the stream function and u is the x-component of the velocity. The velocity has to satisfy the boundary conditions: $u = 0$ for $\Psi = 0$, and $u = u_0$ for $\Psi = \Psi_\infty$ (when $u_0 \neq 0$, $\Psi_\infty = \infty$) and the integral condition

$$\frac{\rho u_0^2}{2} x = \int_0^{\Psi_\infty} (u_0 - u)\, u\, d\Psi = I = \text{const} \qquad (1.4)$$

The author first treats the case $u_0 = 0$ and seeks a solution in the form

$$u = \sqrt{\frac{I_0}{\nu\xi}}\varphi(\sigma), \qquad \sigma = Y(I_0/\nu\xi)^{1/3} \tag{2.2}$$

He finds that

$$\varphi = 1{,}054\,(1 - t^2) \tag{2.6}$$

where t is connected to the variables (x,y) in the physical plane by

$$\frac{2}{\gamma_{\infty}} \ln \frac{1+t}{(1-\sqrt{t})^2} + \frac{12}{\sqrt{3}\sigma_{\infty}} \operatorname{arc\,tg} \frac{1-\sqrt{t}}{\sqrt{3}\sqrt{t}+2} = y \sqrt[3]{\frac{I_0}{\nu\xi^3}} \tag{2.8}$$

Here $\eta_{(\infty)}$ is a known numerical quantity and $E = E_0$.
The stress on the wall is found to be

$$\tau_w = 0.221\,\mu \sqrt[4]{\frac{I_0}{\nu x^3}} \cdots \qquad (2.10)$$

The author then solves the case $u_0 \neq 0$ asymptotically by assuming an expansion of the form

$$\frac{u}{u_0} = f_0(\eta_2) + \frac{f_1(\eta_2)}{(\xi/L_0)} + \frac{f_2(\eta_2)}{(\xi/L_0)^2} + \cdots \qquad \left(\eta_2 = \frac{\Psi}{\sqrt{\nu u_0 (\xi + L_0)}}\right) \qquad (3.3)$$

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