OKOROKOV, S.D.; GOLYNKO-VOL'FSON, S.L.; YARKINA, T.N.; CHEPIK, R.A.

Interaction between calcium aluminate and gypsum at high temperature. Zhur.prikl.khim. 35 no.2:256-263 F '62. (MIRA 15:2)

(Calcium aluminate) (Gypsum)

OKOROKOV, S.D.; GOLYNKO-VOL'FSON, S.L.; YARKINA, T.N.; CHEPIK, R.A.

Characteristics of the formation of calcium aluminates during the firing of charges containing gypsum. Zhur.prikl.khim. 35 no.11; 2554-2558 N '62. (MIRA 15:12)
(Calcium aluminate) (Gypsum)

LUR'YE, Yuliy Sergeyevich; Prinimal uchastiye LYABKIN, G.S., inzh.; OKOROKOV, S.D., prof., nauchn. red.; ROTENBERG, A.S., red. izd-va; ROZOV, L.K., tekhn. red.

[Portland cement] Portlandtsement. Izd.2., perer. i dop. Leningrad, Gosstroiizdat, 1963. 396 p. (MIRA 17:2)

OKOROKOV, S.D., prof.; GOLYNKO-VOL'FSON, kand. tekhn. nauk, dotsent; YARKINA, T.N., inzh.

Effect of mineralizers containing fluorine on the stability and formation of the aluminoferrite phase of portland cement clinkers. Trudy NIITSement no.18:87-96 '63. (MIRA 18:9)

GOL'DSHTEYN, L.Ya.; OKOROKOV, S.D.

Fused portland cement with reduced value of the coefficient of saturation. Trudy Giprotsement no.27;28-36 '63.
(MIRA 17:12)

OKOROKOV, S.D.; KOLYNKO-VOL'FSON, S.L.; YARKINA, T.N.

Effect of fluorides on mineral formation in the system $CaO-Al_2O_3-SiO_2$. TSement 29 no.1:7-9 Ja-F '63. (MIRA 16:2)

1. Tekhnologicheskiy institut imeni Lensoveta.
(Cement clinkers) (Flourides)

OKOROKOV, S.D.; GOLYNKO-VOL'FSON, S.L.; SATALKINA, M.A.

Interaction of calcium aluminates with sulfates of elements of the 22d group of the D.I. Mendeleev periodic system during their sintering. Zhur. prikl. khim. 36 no.10:2097-2103 O '63. (MIRA 17:1)

OKOROKOV, S.D.; GOLYNKO-VOL'FSON, S.L.; SATALKINA, M.A.

Phase composition of products obtained in the synthesis of calcium aluminates from charges with added sulfates. Zhur. prikl. khim. 36 no.12:2587-2595 D'63. (MIRA 17:2)

OKOROKOV, S.D.; GOLYNKO-VOL'FSON, S.L.; YARKINA, T.N.

Possibility of directed change in the course of mineral formation in the system CaO - Al_2O_3 - SiO_2. Dokl. AN SSSR 150 no.5:1047-1050 Je '63. (MIRA 16:8)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta.
(Minerals) (Portland cement)

OKROKOV, S.D., prof.; [illegible]; DMITRIYEVA, G.G., inzh.

Characteristics of mineral formation in the system $CaO-Al_2O_3-SiO_2$ in the presence of gypsum and CaF_2. TSement 30 no.3:6-8 My-Je '64. (MIRA 17:11)

GOL'DSHTEYN, L.Ya.; OKOROKOV, S.D.

Possibility of considerably increasing the content of free CaO and MgO of Portland cements during their manufacture by the fusion method. Dokl. AN SSSR 159 no.2:420-422 N '64.
(MIRA 17:12)

1. Predstavleno akademikom P.A. Rebinderom.

BUTT, Yu.M., prof.; OKOROKOV, S.D.; SYCHEV, M.M.; TIMASHEV, V.V.; POPOVA, N.N., red.

[Technology of binding materials] Tekhnologiia viazhushchikh veshchestv. Moskva, Vysshaia shkola, 1965. 619 p. (MIRA 18:10)

[redacted]

KARVOVSKIY, Georgiy Antonovich; OKOROKOV, Sergey Petrovich; BOL'SHAM, Ya.M., FRIDKIN, L.M., tekhn. red.

[Handbook on asynchronous motors and start-regulating equipment] Spravochnik po asinkhronnym dvigateliam i puskoreguliruiushchei apparature. Moskva, Gosenergoizdat, 1962. 207 p. (MIRA 15:9)
(Electric motors, Induction--Handbooks, manuals, etc.)
(Electric motors--Starting devices)

ANASTASIYEV, P.I.; BROSTREM, A.A.; VESHENEVSKIY, S.N.; GEL'MAN, G.A.; GORNSHTEYN, L.A.; ZIMENKOV, M.G.; KARVOVSKIY, G.A.; KIBLITSKIY, V.A.; KLEYN, P.N.; KLIMIKSEYEV, V.M.; KLYUYEV, S.A.; KNORRING, G.M.; KORENEVSKIY, A.N.; LEYBZON, Ya.I.; LIVSHITS, D.S.; LIGERMAN, I.I.; LOGINOV, O.I.; MILICH, M.B.; NAYFEL'D, M.R.; OKOROKOV, S.P.; POLYAK, A.B.; ROYZEN, S.S.; RYABOV, N.S.; SINITSYN, O.A.; SOLODUKHO, Ya.Yu.; SOSKIN, E.A.; STASYUK, V.N.; BOL'SHAM, Ya.M., red.; GRACHEV, V.A., red.; SAMOVER, M.L., red.; BORICHEV, I. Ye., red.; DANILENKO, A.I., red.; KHRAMUSHIN, A.N., red.; YAKUBOVSKIY, F.B., red.; BRENDENBURGSKAYA, E.Ya., red.; KOMAR, M.A., red.; BORUNOV, N.I., tekhn. red.

[Handbook on electrical systems of industrial enterprises in four volumes] Spravochnik po elektroustanovkam promyshlennykh predpriiatii v chetyrekh tomakh. Pod obshchei red. I.V. Boricheva i dr. Moskva, Gosenergoizdat. Vol.1. [Design of electrical systems of industrial enterprises in two parts] Proektirovanie elektroustanovok promyshlennykh predpriiatii v dvukh chastiakh. Pt.2. Pod red. IA.M.Bol'shama i dr. 1963. 598 p. (MIRA 17:3)

OKOROKOV, V. I.

Coelenterata

Preparing living objects for the study of the theme "Coelenterata." Est. v. shkole, No. 4, 1952.

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

OKOROKOV, V.I.

A new species of cestode, Tatria mathevossianae (fam.Amabiliidae), from Podiceps ruficollis (Pallas) [with English summary in insert]. Zool.zhur. 35 no.9:1299-1302 S '56. (MLRA 9:12)

1. Kafedra zoologii Chelyabinskogo pedagogicheskogo instituta.
(Chelyabinsk Province--Cestoda) (Parasites--Grebes)

USSR/Diseases of Farm Animals. Diseases Caused by Helminths R

Abs Jour : Ref Zhur - Biol., No 19, 1958, No 88290

Author : Okorokov V.I.
Inst : Chelyabinsk State Pedagogical Institute
Title : Vermifuge Treatment as One of the Measures of Shortening Fattening Time and Increasing Productivity in Domestic Birds

Orig Pub : Uch. zap. Chelyab. gos. ped. in-t, 1957, 5, No 1, 173-175

Abstract : No abstract

Card : 1/1

USSR / Zooparasitology - Helminths. G-2

Abs Jour : Ref Zhur - Biol., No 18, 1958, No. 81707

Author : Okorokov, V. I.
Inst : Chelyab. State Pedag. Inst
Title : Helminthofauna of Wild Water Fowl of the Chelyabinsk District and the Seasonal Dynamics of the Most Prevalent Diseases Caused by Them

Orig Pub : Uch. zap. Chelyab. gos. ped. in-t, 1957, 3, No 1, 177-185

Abstract : When 173 birds of 20 species were dissected, 43 helminth species were identified (6 trematode species, 27 cestode, 8 nematode and 2 acanthocephala species). 23 helminth species are common also in domestic fowl. The extent of invasion is 90.7%. The highest invasion intensity is noted in August-September. A list of parasites is given and their hosts and the seasonal dynamics of the most prevalent species is indicated.

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MATEVOSYAN, Ye.N., prof.; OKOROKOV, V.I., kand.biologicheskikh nauk

Neotenic forms of cestodes in water birds of the U. S. S. R.
Trudy VIGIS 6:121-130 '59. (MIRA 15:5)
(Cestoda)
(Parasites--Water birds)
(Neoteny)

MATEVOSYAN, Ye.M., prof.; OKOROKOV, V.I., kand. biologicheskikh nauk

Two new species of cestodes from the little grebe, and considerations on the genus Tatria Kowalewsky, 190[illegible]. Trudy VIGIS 6:131-138 '59. (MIRA 15:5)
(Chernoye, Lake (Chelyabinsk Province)--Cestoda)
(Parasites--Grebes)

DUBOVIK, V.N., [illegible] prepodav.; MAMIN, A.U., kand. geol.-miner. [illegible], dots.; OTTO, P.T.; RUMYANTSEVA, A.Ya., kand. geogr. nauk, ispolnyayushchiy obyazannosti dots.; SERGIN, I.A., st. inzh.; MOSKALEV, A.F.; KOLESNIKOV, B.P., prof., doktor biol. nauk, rektor; OKOROKOV, V.I., kand. biol. nauk, dots.; KLIMENKO, R.A.; STARIKOVA, L.A., assistent; SHUMILOVA, V.Ya., assistent; MAKSIMOVA, V.A., dots.; KIRIN, F.Ya., kand. geogr. nauk, dots.; [illegible]OVA, A.V., red.; MATVEYEV, S.N., red.; [illegible], V.K., red.; [illegible]OVSKIY, I.M., red.; TYAZHEL'NIKOV, Ye.M., red.

[Nature of Chelyabinsk Province] Priroda Cheliabinskoi oblasti. Cheliabinsk, Yuzhno-Ural'skoe knizhnoe izd-vo, 1964. 241 p. (MIRA 18:7)

1. Kafedra geografii Chelyabinskogo pedagogicheskogo instituta (for Dubovik, Mamin, Rumyantseva, Kirin). 2. Nachal'nik geologicheskogo otdela Chelyabinskogo geologorazvedochnogo tresta (for Otto). 3. Chelyabinskaya gidrologicheskaya stantsiya (for Sergin). 4. Nachal'nik pochvennoy partii Chelyabinskoy zonal'no-proizvodstvennoy ekspeditsii (for Moskalev). 5. Institut biologii Ural'skogo filiala AN SSSR (for Kolesnikov). 6. Kafedra zoologii Chelyabinskogo pedagogicheskogo instituta (for Okorokov, Starikova, Shumilova). 7. Chelyabinskiy rybnyy trest (for Klimenko).

PHASE I BOOK EXPLOITATION SOV/5379

Kompleksnaya mekhanizatsiya i avtomatizatsiya proizvodstva; iz opyta zavodov Penzenskogo sovnarkhoza (Overall Industrial Mechanization and Automation; From Experience of Factories Under the Penza Council of the National Economy) [Penza] Penzenskoye knizhnoye izd-vo, 1960. 253 p. Errata slip inserted. 2,000 copies printed.

Ed.: V. Tsar'kov; Tech. Ed.: Ye. Voronkova.

PURPOSE: This collection of articles is intended for the general reader interested in the mechanization and automation of machine-tool production.

COVERAGE: The efforts of industrial workers of the Penza district to fulfill ahead of time the objectives set forth in the Seven Year Plan are discussed in these 11 articles. The need for complete automation in the production of machine tools and instruments is strongly emphasized. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

HIGH-EFFICIENCY PROCESS EQUIPMENT

FOR OVERALL IMPROVEMENT IN PRODUCTION TECHNIQUES

AVAILABLE: Library of Congress

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VK/mem/sky
8-11-60

ALEKSANDROV, G.N., kand. tekhn. nauk, dotsent; OKOROKOV, V.R., inzh.

Statistical method for determining the dimensions of extra-high voltage power transmission line supports taking into account the operating voltage. Izv. vys. ucheb. zav.; energ. 6 no.11:1-7 N'63. (MIRA 17:2)

1. Leningradskiy politekhnicheskiy institut imeni M.I. Kalinina. Predstavlena kafedroy tekhniki vysokikh napryazheniy.

OKOROKOV, V.R., inzh.

Evaluation of the economic effectiveness of decreasing insulation reserves of power transformers. Izv. vys. ucheb. zav.; energ. 7 no.6:16-22 Je '64 (MIRA 17:8)

1. Leningradskiy politekhnicheskiy institut imeni Kalinina. Predstavlena kafedroy ekonomiki i organizatsii energetiki.

KADOMSKAYA, K.P.; LEVINSHTEYN, M.L.; MIKHAYLOV, Yu.A.; OKOROKOV, V.R.; ORLOV, V.N.; POLOVOY, I.F.; KOSTENKO, M.V., prof. red.

[Internal overvoltages of high-voltage a.c. networks, 1961-1963] Vnutrennie perenapriazheniia v elektricheskikh setiakh vysokogo napriazheniia peremennogo toka, 1961- 1963. Moskva, 1964. 241 p. (MIRA 18:4)

1. Akademiya nauk SSSR. Institut nauchnoy informatsii.
2. Chlen-korrespondent AN SSSR (for Kostenko).

OKOROKOV, V.A., kand.tekhn.nauk; RYSS, A.G., inzh.

Methodology for planing the operation of electric power systems.
Elek. sta. 36 no.8:82-84 Ag '65.

(MIRA 18:8)

ALEKSANDROV, G.N. (Leningrad); OKOROKOV, V.R. (Leningrad)

Method for selecting the optimum length of the crossarm of a 750 kv. overhead power transmission line tower. Izv. AN SSSR. Energ. i transp. no.3:68-76 My-Je '65.

1. Submitted January 18, 1965. (MIRA 18:12)

GUSEV, V.N., kand.tekhn.nauk; LISOCHKINA, T.V., inzh.; OKOROKOV, V.R., kand.tekhn.nauk; SHAKHIDZHANYAN, V.N., kand.tekhn.nauk

Consideration of operating conditions in the design of power transformers. Elektrotekhnika 36 no.12:21-24 D '65.
(MIRA 19:1)

ACC NR: AP6004118 SOURCE CODE: UR/0420/65/000/001/0017/0020

AUTHOR: Mel'nikov, B. N.; Okorokov, V. S.

ORG: none

TITLE: Results of a study of noise generated by an AN-24 aircraft over populated areas

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 1, 1965, 17-20

TOPIC TAGS: aerodynamic noise, aircraft, turboprop engine / AN-24 turboprop aircraft, AI-24 turboprop engine

ABSTRACT:

A great deal of consideration has been given lately to the damaging effects of noise generated by civil aircraft. The State Scientific Research Institute of the Civil Air Fleet of the USSR in 1962 initiated a research project aimed at ascertaining the magnitude of the noise generated by the AN-24 airplane. The test airplane, powered by two AI-24 turboprop engines, carried on board a type-4111 condenser-microphone, a type-2110 spectrometer, and a type-2304 noise-level recorder. The MAG-8M tape recorder was used for measuring the intensity of noise generated by the flying aircraft. The near-ground air temperature ranged from 13° to 19°C. The takeoff weight of the airplane was 18—19 tons.

The results of this investigation are shown in Figs. 1 through 4 and Tables 1 and 2. Total noise intensities are determined by one

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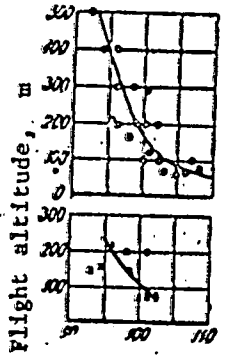

Fig. 1. Test curves showing changes in maximum total noise levels for flights executed under varying conditions

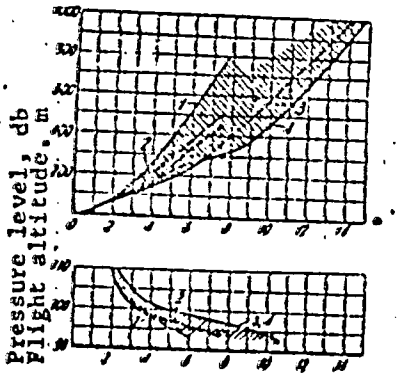

Fig. 2. The area of fixed takeoff trajectories and the corresponding zone of maximum noise levels affecting a populated region

1 - Ascent with engines operating at maximum efficiency; 2, 3, and 4 - ascent with engines operating at nominal efficiency.

ACC NR: AP6004118

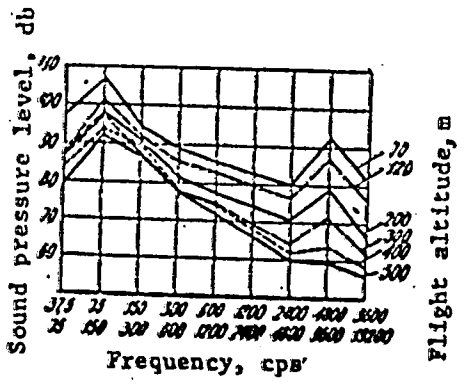

Fig. 3. Noise spectra produced by an AN-24 aircraft

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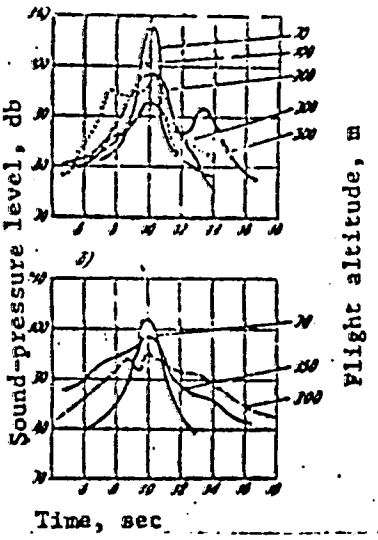

Fig. 4. Variation of total noise levels with time during the flight of an AN-24 aircraft under varying conditions

ACC NR: AP6004118

Table 1. Maximum noise levels under varying operating conditions at various flight altitudes

Operating regime of engines	Flight altitude m	Maximum noise levels		Listening time for total noise level, sec	
		db	PN db (perceptible noise)	Above 90 db level	The upper 10 db
Maximum or nominal	70	108	122.5	2	1
	100	103.5	116.5	2	1.5
	150	100.5	112	2.5	3
	200	99	109	3.5	4
	300	97	103.5	5	5.5
	400	95	100.5	5	8
	500	93	99	5	8.5
Landing	70	102.5	119.5	2.5	2
	100	100.5	116.5	-	-
	150	98	112	6	8.5
	200	96	108	6.5	11

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Table 2. Maximum noise levels at different distances from point of takeoff

Distance from takeoff point, km	Maximum noise levels	
	db	PN db
2	110	123.5
3	100.5—104.5	112—117
4	97.5—101	105—113
5	95 — 99.5	100.5—109.5
6	93 — 98.5	99—107
7	97.5	105
8	96.5	102.5
9	95.5	101.5

sound-pressure levels of the first, second, third, and eighth octave frequency bands (20—300 and 1800—9600 cps). As the flight altitude increases, the effect of the sound-pressure level in the eighth octave diminishes due to the more rapid attenuation of the high-frequency noise in the atmosphere. The primary source of low-frequency noise

ACC NR: AP7004118

is the propeller, while high-frequency noise is produced main by the compressor and turbine. Tests have indicated that the peak noise level of the AN-24 does not exceed the permissible noise level set at 112 PN db at a distance of approximately 4.5 km from the point of takeoff for an ascent along a slanting trajectory. For an ascent along a "steep" trajectory (with engines operating at maximum efficiency) the noise would not exceed the permissible level at a distance of 3—3.5 km from the takeoff point. Orig. art. has: 4 figures and 2 tables. [ATD PRESS: 4180-F]

SUB CODE: 01,20,21 / SUBM DATE: none

Card 8/8

[redacted], V. V., [redacted], S. I., [redacted], A. V., [redacted], N. V., and [redacted], K. D.

"Time of Flight measurement of the total neutron cross-section of Uranium - 233, Uranium - 235 and Plutonium 239," a paper presented at the Atoms for Peace Conference, Geneva, Switzerland, 1955

NIKITIN,S.Ya.; GALANINA,N.D.; IGNAT'YEV,K.G.; OKOROKOV,V.V.; SUKHORUCHKIN,S.I.

[Measuring total neutron cross sections of isotopes in uranium-233, uranium-235, plutonium-239 by the flickering beam method] Izmerenie polnykh neitronnykh sechenii izotopov urana-233, urana-235, plutoniia-239 metodom migaiushchego puchka; doklady, predstavlennye SSSR na Mezhdunarodnuiu konferentsiiu po mirnomu ispol'zovaniiu atomnoi energii. Moskva, 1955. 10 p. [Microfilm]

(MIRA 9:3)

(Nuclear physics) (Uranium) (Plutonium)

OKOROKOV, V.V.

AUTHOR: KIRPICHNIKOV,I.V., OKOROKOV,V.V., SUKHORUCHKIN,S.I. PA - 2306

TITLE: Measurements of the Effective Number of the Fission Neutrons of Pu^{239} if the Energy of the Fissioning Neutrons lies within a Range of 7 to 30 eV. (Izmereniye effektivnogo chisla vtorichnykh neytronov Pu^{239} v oblasti energii pervichnykh neytronov ot 7 do 30 eV, Russian).

PERIODICAL: Atomnaia Energiia, 1957, Vol 2, Nr 3, pp 247 - 252 (U.S.S.R.)
Received: 4 / 1957 Reviewed: 5 / 1957

ABSTRACT: The authors measured the energy dependence of this effective number $\nu_{eff} = \sigma_f/\sigma_a$. Here ν denotes the average number of fast neutrons per fission, σ_f - the fission cross-section, σ_a - the absorption cross-section.

Experimental order: The measuring method has already been described in a former paper. Measurements were carried out by means of a neutron selector. A special scheme of a quartz-shock-generator was developed. An intense flashing up of gamma rays from a beryllium target (whereby the impinging of accelerated deuterons on the target is indicated) was registered by means of a scintillation counter with plastic scintillator. The momentum of the photomultiplier set the generator in operation after formation in the integral scheme. Measurement of the fission cross-section and of the flux of the slow neutrons is also discussed. The elaboration

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Measurement of the Effective Number of the Fission Neutrons of Pu^{239} if the Energy of the Fissioning Neutrons Lies within a Range of 7 to 30 eV.

of measuring results is then discussed.

Measuring results: The measured values of $\sigma_a\sqrt{E}$ and $\sigma_f\sqrt{E}$ are illustrated in form of diagrams. By comparing the results of the present paper with the values of σ_f/σ_a found by means of a fission chamber, it can be seen that for the resonances of Pu^{239} ν does not change much in relation to the thermal values. The results obtained here are compared with those of other authors by means of a table. The fission effect was measured specially for the range of from 13 to 250 eV. Most of the strong resonances of Pu^{239} have a marked fission width with the exception of the resonances in case of 42 and 44 eV which may possibly belong to the isotope Pu^{240}.

Conclusions: The radiation width Γ_γ is not strictly constant, but changes markedly from level to level, a fact which must further be investigated.

In consideration of self-screening of the resonances and of the contribution of the non-resonance-dependent term in the absorption- and fission cross-section it follows that the data of the present

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Measurement of the Effective Number of the Fission Neutrons of Pu^{239} if the Energy of the Fissioning Neutrons lies within a Range of 7 to 30 eV. PA - 2306

Paper do not agree with the results of other investigations concerning the determination of energy dependence of the effective number ν_{eff} of the Pu^{239}. (4 illustrations, 1 table).

ASSOCIATION: Not gieven.
PRESENTED BY:
SUBMITTED: 14.7.1956
AVAILABLE: Library of Congress.

Card 3/3

SOV/120-5-5-11/32

AUTHOR: Okorokov, V. V.

TITLE: A Pulse-Modulated Oscillator with a Quartz Crystal (Impul'sno-modulirovannyy generator s kvartsem)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 5, pp 45-46 (USSR)

ABSTRACT: In some problems of nuclear physics it is necessary to employ a gating circuit which would have an accurately calibrated time scale. One of the methods of generating the necessary waveform is to employ the standard pulse-excited ringing circuit but its accuracy may not always be adequate. The author developed a ringing circuit employing a quartz crystal as the resonant element. This is based on a blocking oscillator which permits the generation of a short pulse (about .5 μ s) having an amplitude of 150-200 V. The pulse is suitable for exciting the crystal and it is possible to generate frequencies up to 4 Mc/s. A detailed circuit diagram of the device is shown in the figure on p 46. The crystal in the circuit resonates at 1 Mc/s. The device is triggered by a positive pulse. A negative pulse is obtained from the blocking oscillator and this is used to trigger a univibrator (see the lower portion of the diagram). The positive gating pulse from the anode of the right hand tube

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A Pulse-Modulated Oscillator with a Quartz Crystal

of the univibrator is applied to the grid of the next tube and results in the closing of the last tube (in the lower portion) of the circuit. This results in closing the feedback circuit of the device and determines the duration of the quartz crystal oscillations. The pulses taken from the anode of the blocking oscillator are applied to the input of a bridge containing crystal. The purpose of the bridge circuit is to eliminate signals from its output; the bridge is balanced by adjusting the trimmer capacitance C_3. The output voltage from the bridge is amplified by 3 tubes. After the termination of the gating pulse, the negative feedback network is "restored" and the signal generated by the crystal is, after amplification, applied back to the crystal in anti-phase. In this manner, the oscillations are completely damped during 100-150 μ s after the disappearance of the gating pulse. The instrument can therefore be operated at the repetition frequency of up to 2 kc/s. The amplified sinusoidal signals from the crystal are applied to

A Pulse-Modulated Oscillator with a Quartz Crystal

another blocking oscillator which generates narrow pulses spaced at 1 μs. The instrument has proved to be successful in practical applications and, in particular, was used for the measurement of the number of secondary neutrons in Pu^{239}. The paper contains 1 figure and 10 references; 4 of the references are English and 6 are Soviet.

SUBMITTED: November 27, 1957.

SOV/120-58-6-11/32

AUTHOR: Okorokov, V. V.

TITLE: A Time Analyzer (Vremennoy analizator)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 6, pp 63-67 (USSR)

ABSTRACT: The principle of operation of the equipment is as follows (see the diagram of Fig.1): a starting pulse A triggers a quartz-crystal ringing oscillator, which produces a train of narrow pulses B , having a repetition period of 1 μs. The analyser has therefore a channel width of 1 μs. The train B is applied to a frequency divider which produces a train of pulses C , in which the pulses are repeated with a period of 8 μs. These pulses are applied to a blocking oscillator which, in turn, is connected to the reset network of a slow switching device. This switching device consists of 14 stages and each stage delays the starting pulse by 8 μs relatively to the preceding stage. Each input signal (pulse) is applied to one of the branches of a phasing stage and is stored until the appearance of the triggering pulse from the train B .

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which follows immediately after it; the triggering pulse from B is applied to the second branch of the phasing circuit. The pulses from the output of the phasing circuit which coincide with one of the pulses of the B train, are applied to the input of a fast switching device. This switch consists of 8 stages (cells) and, in each stage, the investigated pulse is delayed by 1 μs relatively to the preceding stage. Consequently, the pulse of one of the stages of the fast switch, which is applied to the rows of a matrix coincidence circuit, coincides in time with the pulse of one of the stages of the slow switch (which is applied to the columns of the matrix). The coinciding pulses are separated in the coincidence circuit and registered by means of a mechanical counter. The analyzer has 14 x 8 = 112 channels and each channel is provided with a coincidence circuit and a mechanical counter. The circuits of the slow switch, fast switch and the coincidence and phasing devices are discussed in some detail and their diagrams are given. The author thanks N. M. Sorokin.

A Time Analyzer

V. I. Kudryavtsev and Ye. V. Treshin for constructing the analyzer. The paper contains 3 figures and 3 references; 2 of the references are Soviet and one is English.

SUBMITTED: December 21, 1957.

AUTHOR: Okorokov, V.V.

TITLE: A Pulse-train Generator

SOV/120-59-5-15/46

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5, pp 68 - 75 (USSR)

ABSTRACT: The pulse spacing is stabilized by reference to a quartz crystal; synchronizing pulses (8 Mc/s), from the quartz crystal, are used to ensure a delay of not more than 0.12 μsec in starting the pulse train. Figure 1 shows the circuit. The start pulse is fed in on the right to the blocking oscillator, whose transformer has a ferrite ring core; this oscillator is coupled to the crystal oscillator (on the left) via the buffer amplifier. The short pulses present in the anode current of the first valve are multiplied in frequency by the open-ended cable in the cathode circuit (frequency doubler). Figure 2 illustrates this process. Figure 3 illustrates the voltages arising at various points in the circuit. Much of the paper is taken up by a general and rather inconclusive discussion of the transients in this very simple system, which is only

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A Pulse-train Generator SOV/120-59-5-15/46

slightly modified from one given by Elmore and Sands. The last section of the paper deals with the simple modifications needed to double the working frequency of the quartz reference system. There are 5 figures and 12 references, 5 of which are English and 7 Soviet.

SUBMITTED: July 24, 1958

Card 2/2

86754
S/120/60/000/006/030/045
E032/E314

21.5300

AUTHOR: Okorokov, V.V.

TITLE: Automation of Measurements with Charged-particle Spectrometers

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No. 6, pp. 114 - 115

TEXT: It is usual in the case of charged-particle spectrometers to vary the deflecting magnetic field and to measure the counting rate for each value of the field. The present author suggests that this method can be automated by using a variable magnetic field and a time analyser whose time scale is synchronised with the change in the magnetic field. Thus, if an alternating current (sinusoidal in the simplest case) is passed through windings of the magnet of the spectrometer then the deflecting magnetic field will be a periodic function of time. By "triggering" the running time scale of the selector when the magnetic field passes through zero one can obtain the energy spectrum of the particles under consideration. This method was used by the

86754
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E032/E314

Automation of Measurements with Charged-particle Spectrometers

present author in Ref. 1 with a β-spectrometer. The deflecting coils of the β-spectrometer (ironless) are supplied from the mains without any stabilisation. A bank of capacitors having a total capacitance of 600-700 μF was placed in parallel with the windings, forming a tuned circuit having a resonance frequency of 50 c.p.s. In this simple way, the required current amplitude (10 A) was easily obtained. In view of the absence of stabilisation, the peaks in the β-spectrum were not very sharp. It is clear that in such a simple form the method has the following disadvantages:
1) non-uniformity of the energy scale and, consequently, unequal energy intervals per channel;
2) the time required to obtain the whole spectrum was larger than by the usual method.
These disadvantages can be overcome by the use of a sawtooth variation of the magnetic field in the spectrometer. Among the advantages of this modified version of the method is the

S/120/60/000/006/030/045
E032/E314

Automation of Measurements with Charged-particle Spectrometers

fact that it can be fully automatic and the fact that it is insensitive to drift in the counting characteristics of the detecting device. It can be used to obtain spectra of particles emitted by short-lived isotopes. Acknowledgment is made to Ye.F. Tret'yakov for allowing the present author to check the above method with the β-spectrometer developed by him. There is 1 Soviet reference.

ASSOCIATION: Institut eksperimental'noy i teoreticheskoy fiziki AN SSSR
(Institute of Experimental and Theoretical Physics of the AS USSR)

SUBMITTED: November 5, 1959

Card 3/3

B102/B234

AUTHORS: Okorokov, V. V., Tolchenkov, L. L.

TITLE: Investigation of the (n,γ) reactions on Cd, Pd, Ce, ...

SOURCE: Yadernyye reaktsii pri malykh i srednikh energiyakh; trudy Vtoroy Vsesoyuznoy konferentsii, iyul' 1960 g. Ed. by A. S. Davydov and others. Moscow, Izd-vo AN SSSR, ...

TEXT: Targets of Cd, Pd, Ce and Mo were exposed to neutron pulses 3-4 μsec duration) obtained from the cyclotron of the ITEP AN SSSR. ... γ-rays emitted on neutron capture were recorded by a NaI(Tl) detector ... ФЭУ-1БС (FEU-1BS) photomultiplier, which, together with the target ... closed by a shield ... The neutron energy was determined by the time-of-flight ... a cathode follower ... enable the signals ... jected to pulse-height discrimination and fed into a ... -channel ... analyzer. ... measurements were made with a Pu-Be source ... relative ... investigated with a ... time ...

Card 1/2

Investigation of th...

S/905/62/000/000/041/...
B102/B234

ances were observed: ... ev (Pt), ... ev (...), 27.7 ev (Cd), Pd ...
resonance at 2.1, 11.6?, 13.05, 24.8, ... , 29 and ... ev, ...
8.95, 10.3, 12.6, ... at 4.5, 12.2, ... ,
71.8, and 32 ev. In ... cases three ... intensities were det...
by carrying ... wide ... same energy groups with certain ...
2, 4.4, 6.?, and ... Mev. The ... proved to be very sensitive ...
weak resonances ...
first time. There ... ev ... were observed ...
...e.

Card ...

26.2243
1139 50

S/089/62/012/004/010/014
B102/B104

AUTHORS: Yurova, L. N., Stepanov, S. B., Okorokov, V. V., Kudryashov, Ye. I.

TITLE: Some results of pulse measurements of the diffusion parameters of organic liquids

PERIODICAL: Atomnaya energiya, v. 12, no. 4, 1962, 331-332

TEXT: A pulsed source was used to measure the decrease constant α of thermal neutrons in $C_{12}H_{10}$ (100-250°C) and $C_{15}H_{16}$ (18-250°C). The measurements were carried out in a cylindrical tank with a Cd piston. The moderator above the piston served as an additional fast-neutron source. The geometrical parameter Ω was varied by means of the piston. $\alpha = 1/T + D\Omega - (c_D - c_T)\Omega^2$; T - life-time with respect to absorption, D - diffusion coefficient, c_D - coefficient of diffusion cooling, c_T - transport-theoretical correction; from $D = \bar{\lambda}_{tr}\bar{v}_o/3$ which was obtained from the α-measurements, λ_{tr} was calculated for each temperature, when

Card 1/2

Some results of pulse ...

assuming the thermal neutron spectrum as being Maxwellian and the mean neutron velocity $\bar{v}_0 = \sqrt{2kT/m}$ (T - absolute temperature of the medium). From the curves $\bar{\lambda}_{tr} = f(v_0)$, $\bar{\lambda}_{tr} \sim v^{0.33 \pm 0.03}$ (diphenyl) and $\bar{\lambda}_{tr} \sim v^{1.58 \pm 0.12}$ (monoisopropyl diphenyl) was obtained. $\lambda_{tr}(v)$ also differs considerably for equally structured media. For diphenyl the neutron spectrum was most similar to the Maxwellian. Nelkin's method was used to determine c_D when assuming weak dependence of λ_{tr} on the neutron energy ($\bar{\lambda}_{tr} \sim E^{\alpha}$, α is a free parameter): $c_D = (\alpha + 1/2)^2 \sqrt{\pi}\, D^2 / v^0 M_2$, where M_2 is the second moment of neutron energy. The calculated values agree with the measured ones within the limits of error. There are 2 non-Soviet references. The reference to the English-language publication reads as follows: M. Nelkin. J. Nucl. Energy, 8, 48 (1958).

SUBMITTED: July 14, 1961

Card 2/2

AID Nr. 991-4 17 June

OKORKOV, V V

A NEW TIME ANALYZER (USSR)

Okorkov, V. V., and D. L. Tolchenkov. Pribory i tekhnika eksperimenta, no. 2, Mar-Apr 1963, 76-80. S/120/63/000/002/018/041

The development of a 180-channel time analyzer with a minimum channel width of 0.2 μsec and a recording ability of several pulses per cycle was reported recently. The equipment has been in use for approximately one year and has proved to be reliable. The utilization of [illegible], a fast commutator cut-off circuit, and a time-base [illegible] permitted the reduction in minimum width. The device operates as follows: an initiating pulse actuates the master oscillator, which puts out a train of narrow pulses with a period of 0.8 μsec synchronized by means of a crystal-controlled oscillator and whose operating frequency is [illegible] Mc. The slow commutator is also triggered by the initiating pulse. This pulse can be delayed by the appropriate circuit, which is necessary during an analysis of various portions of time spectra. The

Card 1/2

A NEW TIME ANALYZER [Cont'd]

S/120/63/000/002/018/041

signal being investigated is applied to a phasing circuit simultaneously with the pulses. Consequently, the phased-in signal actuates a fast commutator the cells of which fire at intervals of 0.2 μsec. The cutoff of the fast commutator is a special circuit whose output is a train of current pulses with a period of 1.2 μsec. This "cut-off" circuit is controlled by pulses with a period of 0.8 μsec. Finally, a matrix coincidence circuit separates the pulses from fast as well as slow commutators and transmits them to a counter. By use of the device described the (n, γ) reaction on the nuclei of Cd, Pt, Pa, Mo, and U were investigated. The experiments were carried out with channel widths of 2 and 4 μsec. An analysis of statically distributed pulses made at a channel width of 0.2 μsec showed the signal spread to be less than 1%.

[GS]

Card 1

L 10197-63 EWT(q)/EWT(m)/BDS--AFFTC/ASD--JD/HW-2

ACCESSION NR: AP3000030 S/0056/63/044/005/1437/1441

AUTHOR: Levintov, I. I.; Okorokov, V. V.; Smetayayev, V. A.; Tolchenkov, B. L.; Trostin, I. S.

TITLE: Gross structure of the neutron energy spectrum and polarization in (d, n) reactions on nuclei of intermediate mass

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1437-1441

TOPIC TAGS: neutron spectra, gross structures, stripping reactions, neutron polarization

ABSTRACT: With an aim at obtaining data on gross structures in stripping reactions involving neutrons, a study was made of the spectra of neutrons produced in (d, n) reactions on neutral Co, Fe, Ni, and Cu nuclei, for deuteron energies of 12.1 plus or minus 0.4 MeV and for a neutron emission angle in the laboratory system. Proof that the [illegible] forming a group [illegible] peak actually have the same spin and parity would be of particular importance a check on nuclei formed in specific stripping reactions. To this end [illegible]

Card 1/3

polarization and angular distribution of neutrons of the main gross peaks were also investigated for the Co(d,n)Ni and Fe (d, n) reactions. A time-of-flight technique was used with a multichannel time analyzer of nanosecond range, operating on a vernier-scale principle. A distinct gross structure was found to be present in the neutron spectra. Whereas the proton spectra of Schiffer et al. (Phys. Rev. v. 115, 427, 1959) contain several peaks of approximately the same height, the neutron spectra obtained here contain along with peaks of comparatively small height one peak with height several times that of the others. Some relation is found between the extent to which the proton shells are populated and the intensity of the proton spectra. The polarization angle was found to be about 11 and 7% for the Co(d,n)Ni and Fe(d,n)Ni reactions, respectively, and the angular momentum of the captured proton was greater than or equal to $\frac{1}{2}$. On the whole, the obtained experimental data agree with [illegible] on the existence of gross peaks in the neutron spectra from the [illegible] for which definite quantum numbers can be assigned. "The authors express their deep gratitude to the cyclotron crew of the Institute of Theoretical and Experimental Physics for the faultless operation of the accelerator and to V. S. Repin, I. V. Malyutin, and I. I. Mitrofanov for aid in the measurements. Original article has 4 figures.

Card 2/3

OKOROKOV, V.V.; TOLCHENKOV, D.L.

Neutron spectra and angular distributions in (d, n) reactions involving nuclei of medium atomic weight. IAd. fiz. 1 no.3:448-451 Mr '65. (MIRA 18:5)

1. Institut teoreticheskoy i eksperimental'noy fiziki Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.

L 3926-66 EWT(1)/T IUP(c) GG

ACC NR: AP5025256 SOURCE CODE: UR/0386/65/002/004/0175/0179

AUTHOR: Okorokov, V. V. 44,55

ORG: none 44 B

TITLE: Coherent excitation of the optical spectra of atoms passing through a crystal 21,44,55

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 4, 1965, 175-179

TOPIC TAGS: coherent light, coulomb excitation, monochromatic light

ABSTRACT: An analysis is made of the possibility of coherent excitation of the optical levels of atoms passing through a cryatal due to propagation of the atom through the periodic electric field of the atoms of the crystal. The transition of an atom into an excited state depends on a time-dependent perturbation, which in this case is the interaction energy of the two types of atoms. An approximate calculation shows that such an effect can be observed. An experiment for the detection of the effect using He^+ is described. In passage of ~3.7-Mev He^+ ions through a thin mica plate, the frequency of collisions of He^+ ions with atoms of the mica film (ν) is such that $2\pi\nu\hbar = 50$ ev. This is the amount of energy required for a resonance transition of an electron in He^+ from the ground state with $n = 1$ into an excited state with $n = 4$. Therefore, a beam of emerging He^+ ions will, in addition to atoms excited by single collisions, also contain some coherently excited

Card 1/2

L 3926-66
ACC NR: AP5025256

($n = 1 \rightarrow n = 4$) He^+ ions which will emit radiation. The $n = 4 \rightarrow n = 3$ transition of He^+ will radiate in the visible part of the spectrum (blue light) and can easily be detected. The coherent excitation can occur only when v is equal to or is a whole multiple times smaller than the transition frequency $\omega_{exc} = (E_{exc} - E_{gr})/\hbar$. Therefore, this effect can be observed only in the narrow energy region of incident ions such that $\omega_{exc} = 2\pi/T = 2\pi/a_0\sqrt{2E_H^+/m_{He^+}}$, where a_0 is the interplanar spacing = 9.9 Å for mica. The authors point out that it is advantageous to use very thin films of mica to decrease the energy losses of He^+ in passage through the target. Orig. art. has: 3 formulas and 2 figures.

[CS]

SUB CODE: OP/ SUBM DATE: 18Jun65/ ORIG REF: 001/ OTH REF: 000 / ATD PRESS 4/20

Card 2/2

L 28054-66 EWA(h)/EWT(1)/EWT(m)/ETC(m)-6 IJP(c) WW

ACC NR: AP5027007 SOURCE CODE: UR/0120/65/000/005/0053/0057

AUTHOR: Okorokov, V.V.; Tolchenkov, D. L.

ORG: Institute of Theoretical and Experimental Physics of GKAE, Moscow (Institut teoreticheskoy i eksperimental'noy fiziki)

TITLE: Fast neutron spectrometer

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1965, 53-57

TOPIC TAGS: neutron spectrometry, fast neutron, cyclotron

ABSTRACT: A fast neutron time-of-flight spectrometer system was described including the operation of a multichannel analyzer of "vernier" type. The time analyzer was designed for operations in the nanosecond range. The cyclotron of the Institute of Theoretical and Experimental Physics was used as a source of neutron bursts. No stabilization was provided for the amplitude and the high frequency of the cyclotron accelerating voltage. The preliminary tests showed that the complicated cyclotron stabilization can be successfully replaced by an appropriate adjustment of the time analyzer to the operation at the pulse-modulated high-frequency accelerating voltage. The analyzer circuit, the "vernier" method and the time-scale device (expressing the nanosecond intervals in microseconds) were described in the previous papers (PTE, 1961, no. 6

Card 1/2 UDC: 539.283.078

L 28054-66

ACC NR: AP5027007

69 and Atomnaya Energiya, 1958, 5, 135). The present article deals only with changes which were applied to the spectrometer circuit. This circuit, including a 6-cascade arrangement, pulse-control oscillator, vernier, HF-modulator, scintillation counter, time recording analyzer, coincidence circuit and other circuit elements, was described by a block-diagram. Another block-diagram illustrated the time converter circuit. The voltage oscillations and the voltage curve shapes checked at different points of the neutron spectrometer were graphically represented. The circuit of the pulse control oscillator with a pulse forming tube of 6LIP-type was also illustrated. This device forming 3 to 3.5 micro-second pulses was placed inside the cyclotron not far from one of its dees. Finally, the performance of the spectrometer was illustrated by a curve showing the spectrum of neutrons from reaction of $O^{18}(d, n)F^{19}$. Orig. art. has: 5 diagrams.

SUB CODE: 18 / SUBM DATE: 21July 65 / ORIG REF: 011 / OTH REF: 001

Card 2/2

L 27070-66 EWT(m)

ACC NR: AT6012257 SOURCE CODE: UR/3138/65/000/357/0001/0012

AUTHOR: Okorokov, V. V.

ORG: none

TITLE: Coherent excitation of nuclei passing through a crystal

SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Institut teoreticheskoy i eksperimental'noy fiziki. Doklady, no. 357, 1965. O kogerentnom vozbuzhdenii yader, proletayushchikh cherez kristall, 1-12

TOPIC TAGS: Coulomb excitation, coherent light, crystal lattice structure, Fourier analysis, relativistic electron, general relativity theory, crystal

ABSTRACT: The author presents certain qualitative arguments which give grounds for assuming that coherent Coulomb excitation can be realized not by single collisions of two nuclei, but under the influence of multiple periodic perturbation experienced by a nucleus passing through a crystal. The analysis is based on calculations for a nucleus which moves along a chain of atoms in a crystal at a certain distance from their centers, by expressing the Fourier spectrum of the perturbation experienced by the nucleus following interaction with a large number of atoms. The calculation shows that the Fourier spectrum of the multiply interacted nucleus consists of a series of narrow and intense lines constituting a finite sequence of pulses. It is also shown that the spectral density of the Fourier spectrum increases in proportion

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ACC NR: AT6012257

to the number of interactions, and that this change is connected with the coherence of the spectral components of the single interactions making up the spectrum and following each other periodically. Factors contributing to an increase in the number of the short-range interactions between the traveling nucleus and the crystal atoms are discussed. Inasmuch as the vibrations of the atoms and the crystal greatly limit the possibility of observing the coherent Coulomb excitation, the author considers means of reducing this effect, for example by cooling the crystal. The experimental difficulties lying in the way of observing this effect are discussed. Also discussed is the effect of motion of a relativistic electron through the crystal and the motion of ions through the crystal. It is suggested that the observation of the coherent excitation of optical levels of ions passing through a crystal would encounter fewer experimental difficulties that the observation of coherent Coulomb excitation of nuclei. Possible applications of the same phenomenon to check the deductions of general theory of relativity, connected with the tremendous accelerations experienced by the nucleus passing through a crystal, are mentioned. The author thanks B. Ya. Nikitin and K. A. Ter-Martirosyan for useful discussions. Orig. art. has: 4 figures and 4 formulas.

SUB CODE: 20/ SUBM DATE: 05Jun65/ ORIG REF: 005/ OTH REF: 003

L 34488-66 EWT(1)

ACC NR: AP6014701 SOURCE CODE: UR/0367/65/002/006/1009/1014

AUTHOR: Okorokov, V. V.

ORG: Institute of Theoretical and Experimental Physics, GKIAE (Institut teoreticheskoy i eksperimental'noy fiziki GKIAE)

TITLE: Coherent excitation of nuclei passing through a crystal

SOURCE: Yadernaya fizika, v. 2, no. 6, 1965, 1009-1014

TOPIC TAGS: Coulomb excitation, coherent light, crystal lattice structure, Fourier analysis, relativistic electron, ~~general relativity theory~~ EXCITED ATOM

ABSTRACT: Qualitative arguments are presented in favor of the hypothesis that coherent Coulomb excitation can be realized not by single collisions of two nuclei, but as a result of the multiple periodic perturbations experienced by a nucleus passing through a crystal. The calculations are made for a nucleus moving along a chain of atoms in a crystal at a certain distance from their centers, and consist of expressing the Fourier spectrum of the perturbations of the nucleus by the interaction with a large number of atoms. The Fourier spectrum of the multiply interacting nucleus is shown to consist of a series of narrow and intense lines constituting a finite sequence of pulses. The spectral density of these pulses increases in proportion to the number of interactions. This increase is connected with the coherence of components of the periodic sequence of single interactions making up the spectrum. Factors con-

Card 1/2

L 34488-66

ACC NR: AP6014791

tributing to an increase in the number of the short-range interactions between the traveling nucleus and the crystal atoms are discussed. Since the vibrations of the atoms and the crystal greatly limit the possibility of observing the coherent Coulomb excitation, the author considers means of reducing this effect, for example by cooling the crystal. The effect of motion of a relativistic electron through the crystal and the motion of ions through the crystal is discussed. The experimental difficulties lying in the way of observing this effect are described. It is suggested that the observation of the coherent excitation of optical levels of ions passing through a crystal would encounter fewer experimental difficulties than the observation of coherent Coulomb excitation of nuclei. Possible applications of the same phenomenon to check the deductions of general theory of relativity, connected with the tremendous accelerations experienced by the nucleus passing through the crystal, are mentioned. The author thanks S. Ya. Nikitin and K. A. Ter-Martirosyan for useful discussions. Orig. art. has: 4 figures and 4 formulas.

SUB CODE: 20/ SUBM DATE: 07May65/ ORIG REF: 004/ OTH REF: 004/

Card 2/2

LASUNOV, N.A., otv. red.; MOROZOVA, M.P., red.; GUTOROVA, V.G., red.; ZHILYAYEVA, A.V., red.; KOMISAROVA, A.M., red.; OKOROKOVA, A.A., red.; USHAKOVA, P.N., red.

[Regulations for the design, installation and safe operation of elevators. Compulsory for all ministries and services] Pravila ustroistva i bezopasnoi ekspluatatsii liftov. Obiazatel'nyi dlia vsekh ministerstv i vedomstv. Moskva, Nedra, 1965. 73 p. (MIRA 18:8)

1. Russia (1923- U.S.S.R.) Komitet po nadzoru za bezopasnym vedeniyem rabot v promyshlennosti i gornomu nadzoru.

YEFUNI, S.N.; FEDERMESSER, K.M.; OKOROKOVA, K.V.

Giant pseudomyxoma in the abdominal cavity. Khirurgiia 32 no.6: 75-76 Je '56. (MLRA 9:10)

1. Iz khirurgicheskogo otdeleniya Kytmanovskoy rayonnoy bol'nitsy Altayskogo kraya.

(ABDOMEN, dis.
pseudomyxoma peritonaei, giant, surg.)

SIMONOV, A.M.; OKOROKOVA, M.N.

Bipolar ions forming following the removal of protons from the NH group. Part 11: Rearrangement of bipolar ions of the ammonium series. Zhur.ob.khim. 27 no.7:1941-1945 Jl '57. (MIRA 10:10)

1. Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti.
(Dimethylamine) (Ammonium compounds) (Betaine)

5.2630

77302
SOV/79-30-1-53/76

AUTHORS: Okorokova, M. N., Simonov, A. M.

TITLE: Concerning Zwitterions Formed by the Elimination of a Proton From the NH-Groups. XIV. m-Aminodimethylaniline Derivatives

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 239-241 (USSR)

ABSTRACT: The article discusses preparation of zwitterions by the action of alkali on the onium salts containing an N atom in meta-position to the NH-group, and isomerism of zwitterions. This is a continuation of the author's previous work (ZhOKh, 27, 1941, 1957). It was shown that the quaternary salt, containing p-nitrobenzolsulfonyl group (I, R = p-$NO_2C_6H_4SO_2$), is easily converted (by the action of aqueous ammonia) into zwitterion (II).

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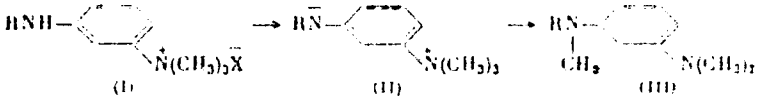
Concerning Zwitterions Formed by the Elimination of a Proton From the NH-Groups. XIV. m-Aminodimethylaniline Derivatives

77338
SOV/79-30-1-30/78



The quaternary salt, containing p-nitrobenzoylamino group in meta-position to the onium N atom (I, R = p-$NO_2C_6H_4CO$), can not be converted into zwitterion by the action of alkali in aqueous media. The zwitterion (II) on melting is converted into N-methylanilide (III). Structure of the latter was proved by a parallel analysis. There are 4 references, 1 U.S., 1 U.K. 2 Soviet. The U.S. and U.K. references are: J. Roberts, R. Clement, J. Drysdale, J. Am. Chem. Soc., 73, 2181 (1951); F. King, K. Acheson, A. Yorke, J. Chem. Soc., 1948, 1926.

Card 1/3

Concerning Zwitterions Formed by the Elimination of a Proton From the NH-Groups. XIV. m-Aminodimethylaniline Derivatives

77[illegible]
SOV/79-30-1-5[illegible]

ASSOCIATION: All-Union Correspondence Institute of Textile and Light Industry (Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti)

SUBMITTED: October 6, 1958

Card 3/3

89989

S/190/61/003/003/004/014
B101/B204

15.8112

AUTHORS: Parini, V. P., Kazakova, Z. S., Okorokova, M. N., Berlin, A. A.

TITLE: Polymers with a system of conjugate bonds and hetero-atoms in the conjunction chain. XII. Synthesis and properties of several polyaminoquinones

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 3, 1961, 402-407

TEXT: A. A. Berlin and N. G. Matveyeva (Ref.1: Vysokomolek. soyed., 1, 1643, 1959) described the formation of polyaminochloroquinones by reactions between diamines and chloranil. These compounds have a positive magnetic susceptibility and the properties of electron exchangers. The present paper describes a study of the formation of polyaminoquinones by means of reactions between diamines and non-substituted quinones. The reactions were made with p-phenylene diamine (reaction product I), benzidine (II), benzidine-3-3'-dicarboxylic acid (III), and hexamethylene diamine. The diamines dissolved in alcohol or the acid dissolved in

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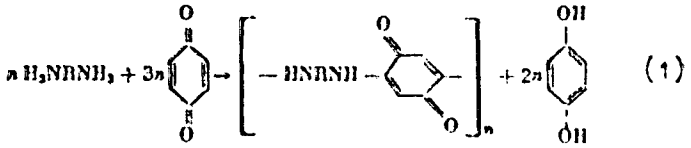
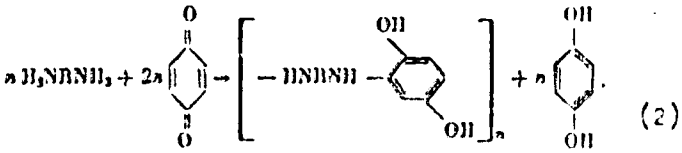
aqueous-alcoholic solution of NaOH were added to boiling quinone. The resulting precipitate was filtered off after 24 hr, treated for several times with hot alcohol, 5% NaOH, and 5% HCl, and was finally rinsed with water, alcohol, and ether. On the basis of the polymer yield and of the quantities of hydroquinones that had formed, it was concluded that only the first of the two possible reactions



(1)

and



(2)

takes place, and that it is not affected by excess diamine. Therefore, further experiments were made with a ratio diamine/quinone = 1/3. On the

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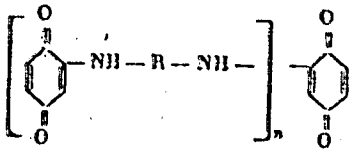
B101, B204

basis of data from elementary analysis and of the chemical behavior of the polymers which indicates quinone terminal groups, the following formula is assumed:



where R = $(CH_2)_6$; C_6H_4; $C_{12}H_8$; $C_{12}H_6(COOH)_2$. A degree of polymerization of 5 - 10, and thus a molecular weight of 1000 - 3000 followed from the ratio N/C. The substances I - III are dark brown powders. They form blue or violet solutions in concentrated H_2SO_4 and are partially soluble in quinoline, and only slightly soluble in other organic solvents. III gives a brown solution in dimethyl formamide and alkali. Hard films were obtained from this solution. III dissolved in dimethyl formamide forms a black precipitate with copper acetate which probably has a cross-linked chelate structure. Benzidine dicarboxylic acid dissolved in dimethyl formamide

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was caused to react with quinone in order to obtain polymers of higher molecular weight. The result were black substances. The reduced viscosity of III dissolved in dimethyl formamide showed an anomaly. (Fig. 1). The substances I - III have electron exchanger properties. They may be partially reduced and are oxidized again by atmospheric oxygen. The fact that they can be reduced only difficultly, and the epr spectrum observed lead to the conclusion that the conjunction of the bonds is not interrupted by the imino group between the benzene rings. These substances have a positive magnetic susceptibility, are highly refractory (loss in weight after 1 hr of heating at 350°C 10.5 - 11%, after one further hour at 450°C about 5%), and are not combustible. Their conductivity obeys the law for semiconductors: $\sigma = \sigma_0 \exp(-E/kT)$. The following was found:

Polymer	E, ev	σ_0, ohm^{-1}.cm^{-1},	$\sigma_{20°}$, ohm^{-1}.cm^{-1}
I	0.9	30	10^{-15}
II	1.0	30	10^{-16}
III	0.4	2.10^{-3}	10^{-10}

According to these data, III has semiconductor properties. The possibility of a partial semiquinone structure is discussed. The reaction product

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of quinone and hexamethylene diamine, a brown, elastic, easily combustible substance, was not examined in detail. There are 2 figures, 3 tables, and 10 references: 6 Soviet-bloc and 4 non-Soviet-bloc. The 3 references to English-language publications read as follows: H. G. Cassidy, J. Amer. Chem. Soc., 71, 402, 1949; H. G. Cassidy, J. H. Updergraff, ibid. 71, 407, 1949; D. Bijl, H. Kainer, A. C. Rose-Innes, Nature, 174, 830, 1954.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR
(Institute of Chemical Physics, AS USSR).
Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti (All-Union Correspondence Institute of Textile and Light Industry)

SUBMITTED: July 5, 1960

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Polymers with a system...

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B101/B204

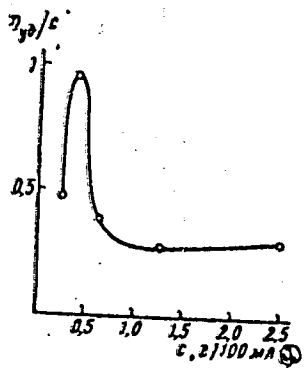

Рис. 1

Legend to Fig. 1:
a) g/100 ml

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5.5720
1.8690

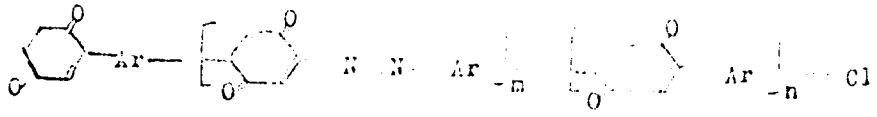
S/190/62/004/004/005/012
B119/B138

AUTHORS: Parini, V. P., Kazakova, Z. S., Okorokova, M. N., Berlin, A.A.

TITLE: Polymers with conjugate bonds and heteroatoms in the conjugate chain. XXII. Products of the reaction of bis-diazo compounds with quinones

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 4, 19[illegible], 5[illegible]-51[illegible]

TEXT: The reaction of p-benzoquinone with bis-diazo compounds of p-phenylene diamine, benzidine, and benzidine-3,3'-dicarboxylic acid was studied. For each of the two latter compounds the reaction was conducted in two variants: (1) with neutralization of the released HCl by sodium acetate; (2) without neutralization. Five polymers of the proposed general formula



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Polymers with conjugate bonds and ...

were obtained (Ar is the aromatic group corresponding to the initial product). The compounds contain 5-15 benzene nuclei per molecule (estimated molecular weight 500-1900). The nitrogen content of the polymers, which depends on the acidity of the reaction medium, is 7.5% (with neutralization) to 11.6%. The compounds are heat resistant (5% of weight at 300°C) have electron exchange properties, and emit EPR signals with an integral intensity of around 10^{18} - 10^{20} paramagnetic particles per gram. At 25°C the electrical conductivity is 10^{-16} to 10^{-20} $ohm^{-1}.cm^{-1}$. The compounds with the fundamental molecules

react with heavy metal salts (solution in dimethyl formamide) to give insoluble compounds, probably with formation of cross-linked chelate structures. There are 1 figure and 2 tables. The most important English-language reference is: D. E. Kvalnes, J. Amer. Chem. Soc., 56, 2478, 1934.

Card 2/3

S/190/62/004/004/009/019
Polymers with conjugate bonds and ... B119/B138

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AS USSR). Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti (All-Union Correspondence Institute of the Textile and Light Industries)

SUBMITTED: March 9, 1961

Card 3/3

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SHTENBERG, A.I.; OKOROKOVA, Yu.I.; YEREMIN, Yu.N. (Moskva)

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OKOS, O.

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In essential hypertension, the oscillometric index of the legs decreases in the ventrical position just as in persons with intact circulation. This 'positive static reaction' is lost in elasticity hypertension and arteriosclerosis without high blood pressure: the oscillations remain unchanged or increase (paradoxical reaction). In hemiplegia, the reaction is slighter in the diseased extremity.

Gottlieben - Budapest

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(RAYNAUD'S DISEASES, physiol.
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(COLD, eff.
on vasodilation in Raynaud's dis. & in normal conditions)

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(OCCUPATIONAL DISEASES
Raynaud s dis. caused by vibrating tools)
(VIBRATIONS, inj. eff.
Raynaud's dis. caused by vibrating tools)

BUGAR-MESZAROS, K.; OKOS, G.; KOROSSY, S.

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1. Service de medicine interne No. I. de l'Hopital Istvan, Budapest
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(BLOOD PRESSURE,
cold-pressor test)
(COLD, effects,
on blood pressure, cold-pressor test)

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(RAYNAUD'S DISEASE, physiol.
eff. of cold on vasc. dilatation in normal persons & in Raynaud's dis.)
(COLD, eff.
on vasc. dilatation in Raynaud's dis. & in normal persons)