

11/11/11

1/27 Mrs. J. J. J. J.

1. The first thing I noticed when I stepped out of the car was the cold, crisp air. It was a relief after the warm, humid weather of the South. I looked up at the sky, which was a pale, hazy blue. The sun was just starting to rise, and the light was soft and golden. I took a deep breath and felt a sense of peace. The world was so quiet, and I felt like I was in a new place. I walked towards the building, and the sound of my footsteps echoed on the pavement. The building was a simple, two-story structure with a flat roof. It looked like a typical office building from the 1950s. I entered the building and found a large, open space. There were several people working at desks, and the atmosphere was busy but calm. I found a desk and sat down, and I began to work. The day went by quickly, and I felt like I had found a new home. I was happy to be here, and I was looking forward to the future.

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YUDIN / G.

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CIA-RDP86-00513R001963110005-5"

residue owing to formation of much tar. residue is
benzylidene, the residue and a little HCO₂NH₂
H₂O or 100% even residue, decamp. 200% O. 31. 200%

The first of these is the fact that the
Soviet Union has a large and growing
military establishment. This is a
fact which is often overlooked by
the West. The Soviet Union has a
large and growing military establishment
which is a fact which is often
overlooked by the West. The Soviet
Union has a large and growing military
establishment which is a fact which
is often overlooked by the West.

YUDIN, L. G.

AUTHORS: Yudin, L. G., Kost, A. N., Berlin, Yu. A. 79-11-24/56
~~Shipov, A. E.~~

TITLE: Reduction With Formic Acid and its Derivatives
(Vostanovleniye murav'inoi kislotoy i yeye proizvodnyimi).
VII. On the Reduction of Compounds With a Pyridine Nucleus
(VII. O vostanovlenii soyedineniy, soderzhashchikh
piridinovoye yadro).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11,
pp. 3021-3026 (USSR)

ABSTRACT: The authors earlier showed that the process of reduction of
the quinoline salts with formic acid (up to 1-alkyl-1,2,3,4-
tetrahydroquinolines) greatly accelerated upon addition
of triethylamine. In the present work this observation was
used in the reduction of a number of other compounds with
pyridine-nucleus. Chlorides and bromides of N-alkylpyridine
in the reduction with formic acid and sodium-formate chiefly
formed 1-alkylpiperidines and only 10-15% 1-alkylpiperidines.
In the experiment to reduce in this manner the iodides of
N-ethyl- or N-butyl-pyridine only labile compounds were
obtained. With triethylamine in the place of formate, how-
ever, the iodides and sulfates of N-alkylpyridine salts, like

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APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963110005-5

Reduction With Formic Acid and its Derivatives.
VII. On the Reduction of Compounds With a Pyridine Nucleus

79-11-24/56

the bromides and chlorides, are reduced. The period of reaction is in this connection shortened from 18-20 to 3-4 hours and the yields of 1-alkyl- Δ^3 -piperidines increased to 25-35%. Thus the salts of N-alkylpyridine are fairly easily reduced, where a mixture of 1-alkylpiperidines and 1-alkylpiperidine forms. The latter are separated over their dibromides with subsequent splitting off. In the reduction of isoquinoline and its quaternary salts a hydrogenation of the pyridine-ring and the formation of 1,2,3,4-tetrahydroisoquinoline takes place. There are 15 references, 3 of which are Slavic.

ASSOCIATION: Moscow State University (Moskovskiy gosudarstvennyy universitet).

SUBMITTED: November 1, 1956

AVAILABLE: Library of Congress

Card 2/2 1. Formic acid - Derivatives 2. Pyridines - Derivatives

ZOLOTAREV, Ye.Kh., KOST, A.N., FEDDER, M.L., YUDIN, L.G., URGENSON, I.A.

Measures for human protection against rat flea attacks. Nauch.dokl.
vys.shkoly;biol.nauki no.1:44-45 '58 (MIRA 11:8)

1. Predstavlena kafedrami entomologii i organicheskoy khimii
Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova i
TSentral'nym nauchno-issledovatel'skim dezinfektsionnym institutom
Ministerstva zdravookhraneniya SSSR.
(INSECT BAITS AND REPELLENTS)
(FIRAS)

ZOLOTAREV, Ye.Kh.; FEDDER, M.L.; KALAKUTSKAYA, T.V.; YUDIN, L.G.; DMITRIYEV, B.A.

A study of repellents. Report No.2: Acyltetrahydroquinolines as mosquito repellents. Nauch. dokl. vys. shkoly; biol. nauki no.2: 37-40 '58. (MIRA 11:10)

1.^Predstavlena kafedrami entomologii i organicheskoy khimii Moskovskogo gosudarstvennogo universiteta imeni M.V. Lomonosova i Tsentral'nym nauchno-issledovatel'skim dezinfektsionnym institutom Ministerstva zdoravookhraneniya SSSR.
(Quinoline) (Mosquitoes) (Insect baits and repellents)

5(3)

AUTHORS: Yudin, I.G., Kost, A.N., Zolotarev, Ye, Kh., SOV/55-58-2-22/35
and Mirza, A.N.

TITLE: Some Derivatives of the Tetrahydroquinoline and Their Effect
on Plant-Lice (Nekotoryye proizvodnyye tetrogidrokhinolina
i ikh deystviye na tley)

PERIODICAL: Vestnik Moskovskogo Universiteta. Seriya matematiki, mekhaniki,
astronomii, fiziki, khimii, 1958, Nr 2, pp 169-176 (USSR)

ABSTRACT: Several combinations from the series of the 1,2,3,4 - tetra-
hydroquinoline were synthetically obtained. In a con-
centration of 0,5% in an emulsion most of them are toxics for
plant-lice and show a high mortality. Some preparations have
a highly caustic effect on plants.
There are 12 references, 5 of which are Soviet, 4 American,
and 3 German.

ASSOCIATION: Kafedra organicheskoy khimii i kafedra entomologii
(Chair of Organic Chemistry and Chair of Entomology) [Moscow Univ.]

SUBMITTED: April 3, 1957

Card 1/1

ZOLOTAHEV, Ye.Kh.; FEDDER, M.L.; YUDIN, L.G.; YURGENSON, I.A.

Study of repellents. Report No.3: Acyltetrahydroquinolines as protective substances against fleas. Vest.Mosk.un.Ser.biol., pochv., geol., geog. 13 no.3:43-52 ' 58. (MIRA 12:1)

1. Kafedry organicheskoy khimii entomologii Moskovskogo gos. universiteta i Tsentral'nyy dezinfektsionnyy nauchno-issledovatel'skiy institut.

(Quinoline) (Fleas) (Insect baits and repellents)

YUDIN, L. G., Candidate of Chem Sci (diss) -- "The synthesis and certain reactions of the tetrahydroquinones". Moscow, 1959. 11 pp (Moscow Order of Lenin and Order of Labor Red Banner State U im M. V. Lomonosov, Chem Faculty), 100 copies (KL, No 22, 1959, 110)

5(3)
AUTHORS:

Kost, A. N., Yudin, L. G., Terent'yev, A. P.

SOV/79-29-6-39/72

TITLE:

Synthesis of The 9,10-Dialkyl Lilolidenes (Sintez 9,10-dial-killilolidenov)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 6,
pp 1949 - 1953 (USSR)

ABSTRACT:

According to reference 4 a synthesis of the lilolidenes based on the Fischer reaction was suggested. Compound (III) was synthesized from 1,2,3,4-tetrahydroquinoline by means of the nitroso compound (II); its reaction with pyrotartaric acid led to the hydrazone which with stannous chloride finally yielded lilolide carboxylic acid. The authors used this method for the synthesis of a series of 9,10-dialkyl lilolidenes-9 according to the general scheme 1. The treatment of tetrahydroquinoline with nitrous acid was carried out by means of diluted sulphuric acid and not with hydrochloric acid (Ref 5) since in this case a regrouping of the nitroso group into position 6 is possible. The ethereal extraction of the nitroso compound was washed out with water for several times since traces of nitric and nitrous acid produce low yield. The method of reduction described in publications (Refs 4,6) leads to low yields in amine (III) since

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Synthesis of the 9,10-Dialkyl Lilolidenes

SOV/79-29-6-39/72

an elimination of the nitroso group takes place and tetrahydroquinoline forms as the main product. For this reason the reduction was carried out at 10-15° and in ethyl-instead of methyl alcohol. The amine (III) yields in this case increase to 75-80%. The 1-aminotetrahydroquinoline obtained led, in the case of heating with carbonyl containing compounds to oily hydrazones which were directly transformed into the lilolidenes. The zinc chloride used in the Fischer regrouping could not be used in the present case because of resinification and difficult purification. In the case of diluted sulphuric acid, however, the formation of the lilolidenes takes place with yields of 60-95% without resinification. The structure of the synthesized products was confirmed by the reduction of the compound (IV) into the compound (V) which was obtained by the reaction of 2,3-dimethyl indoline with trimethylene bromochloride (Scheme 2). This was also confirmed by the melting of the mixture of the two compounds without temperature decrease and by spectrum analysis. There are 1 figure and 8 references, 3 of which are Soviet.

ASSOCIATION:

SUBMITTED:

Card 2/2

Moskovskiy gosudarstvennyy universitet (Moscow State University)
April 14, 1958

5.3610

75693
SOV/80-32-10-42/51

AUTHORS: Kost, A. N., Pertsov, L. D., Yudin, L. G.,
Kalinkin, S. F.

TITLE: Brief Communications. Catalytic Hydrogenation of
Quinoline

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 10,
pp 2349-2351 (USSR)

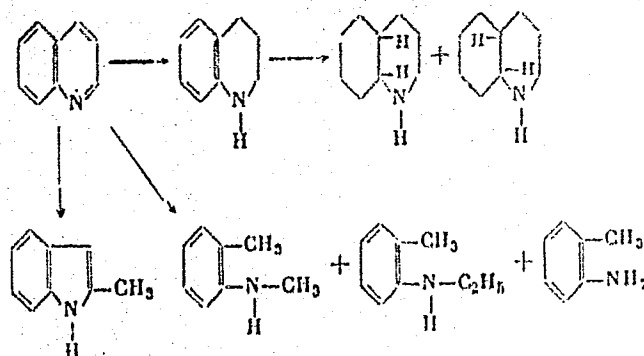
ABSTRACT: Nickel on chromic oxide is used as an industrial
catalyst for the hydrogenation of quinoline. The
above catalyst is very effective. The hydrogenation
already starts at 90° and 80 atm pressure. Two at-
tempts were made to hydrogenate quinoline: 1) Hydro-
gen was introduced into the reactor at 50 atm pressure.
The reaction was carried out at 110-115° and 100 atm
pressure for 10 hr. 101% of catalyzate was obtained,
calculated on the starting material. After vacuum
distillation 7.8% of cis- and trans-decalin and 85.3%
of 1,2,3,4-tetralin were obtained.

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Brief Communications. Catalytic
Hydrogenation of Quinoline

75693

SOV/80-32-10-42/51



2) The reaction was carried out at 105-110° and at 100 atm pressure. 102.5% of catalyzate was obtained, calculated on the starting material. After distillation 96.4% of 1,2,3,4-tetralin and 2% of decalin were obtained. The residue (about 1%) was a tar-like product. There are 16 references, 7 Soviet, 4 German, 3 U.S., 1 Japanese, 1 Italian. The 3 U.S. references are: Travis, B., Morton, F., Jones, H., Robinson, J., J. Econ. Entomol., 42, 686 (1949); Gouck, H., Gilbert, J., *ibid*, 48, 499 (1955); Adkins, H.,

Card 2/3

Brief Communications. Catalytic
Hydrogenation of Quinoline

75693
SOV/80-32-10-42/51

Billica, H., J. Am. Chem. Soc., 70, 695 (1948).

SUBMITTED: June 9, 1958

Card 3/3

ZOLOTAREV, Ye.Kh.; YUDIN, L.G.; KALAKUTSKAYA, T.V.; KOST, A.N.

Testing of repellents. Report No.7:219-222 '60.

(MIRA 13:12)

(QUINOLINE)

87708

S/032/60/026/012/021/036
B020/1056

1-9606 also 2807

AUTHORS: Obozov, I. P. and Yudin, L. G.

TITLE: A Method of Recording the Curves of the True Stresses From
the Machine Diagram of the Elongation of a Flat Specimen

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 12,
1401-1403

TEXT: When recording the true stress curve from the elongation diagram of a flat specimen consisting of a metal foil, it must be taken into account that by means of the diagram-recording device of the machine both the elongation of the specimen and the elastic deformation of the machine and the elastic distortion of the components of their measuring mechanism and of the clamps are recorded. In the case of elongation of the flat specimens, also the shift of the heads of the specimen together with the wedge-shaped jaws of the tongs is recorded in the machine diagram; the latter serve to fasten the specimen. For determining the elongation of the specimen the elastic deformation of the machine (ΔI_M) and the slipping-out of the specimen must be eliminated. In determining the quantity ΔI_M it suffices

Card 1/3

87708

A Method of Recording the Curves of the True
Stresses From the Machine Diagram of the
Elongation of a Flat Specimen

S/032/60/026/012/021/036
B020/B056

to fasten a solid and short specimen in the clamps of the machine, whose elongation may be neglected. By loading the specimen, the diagram $P = f(\Delta l_M)$ is obtained, which characterizes the dependence of the elastic deformation of the machine on the load. For the extent of slipping-out Δl_{gl} , the relation $\Delta l_{gl} = \Delta l - \Delta l_k$ is derived, where Δl_k is the elongation after destruction and Δl the elongation found from the diagram in consideration of the elastic deformation of the machine and of the specimen itself. Δl may be found according to the scheme shown in Fig. 1. Fig. 2 shows the transformation of the machine diagram into the elongation diagram of the specimen itself. Fig. 3 shows the curve of the true stresses, recorded on the basis of the machine diagram of the elongation of the low-carbon steel specimen having the dimensions $A = 1.02$ mm, $B = 19.90$ mm and a length of $l_0 = 100.08$ mm. The spread of the results is, contrary to recording of the curves of the true stresses, by measuring the cross sections, very low. With an increase of the calculated length of the specimen, the error of the Ψ value is reduced nearly proportionally to the quantity l_0 . There are 3 figures and 1 Soviet reference.

Card 2/3

87708

A Method of Recording the Curves of the True S/032/60/026/012/021/036
Stresses From the Machine Diagram of the B020/B056
Elongation of a Flat Specimen

ASSOCIATION: Tul'skiy mekhanicheskiy institut
(Tula Mechanical Institute)

Card 3/3

ZOLOTAREV, Ye.Kh.; MITROFANOV, V.G.; YUDIN, L.G.; STYAZHKINA, N.B.

Investigation of repellents. Report No.12: Repellent action of
N-acylindolines on the fleas *Xenopsylla cheopis* Roths.
Vest. Mosk. un. Ser. 6: Biol., pochv. 16 no.4:58-61 J1-Ag '61.

(MIRA 14:7)

1. Kompleksnaya laboratoriya po izucheniyu sredstv i sposobov
bor'by s vrednymi zhivotnymi i boleznyami rasteniy Moskovskogo
gosudarstvennogo universiteta.

(INSECT BATS AND REPELLENTS)

(FLEAS)

(INDOLINE)

KOST, A.N.; YUDIN, L.G.; POPRAVKO, S.A.

Condensed systems with a nitrogen heteroatom. Part 4: Synthesis
of benzopyrrolizines with functional groups. Zhur.ob.khim. 32
no.5:1544-1550 My '62. (MIRA 15:5)
(Pyrrolizine)

YUDIN, L.G.; POPRAVKO, S.A.; KOST, A.N.

Condensed systems with a nitrogen heteroatom. Part 5:
Formation of the hydroxyindole structure in the
Fisher reaction involving l-aminoindolines. Zhur.ob.khim.
32 no.11:3586-3590 N '62. (MIRA 15:11)

1. Moskovskiy gosudarstvennyy universitet imeni
M.V. Lomonosova.

(Quinolone)

(Indoline)

YUDIN, L.G.; BUDYLIN, V.A.; KOST, A.N.

9-Lilolidenes. Metod. poluch. khim. reak. i prepar. no.11:
65-68 '64. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
Submitted April 1964.

RENNE, I.P., kand. tekhn. nauk, dotsent; TSYPINA, M.N., inzh.; YUDIN,
L.G., inzh.

Some factors affecting the measurement precision of dividing
nets used in studying local deformations. Izv. vys. ucheb.
zav.; mashinoatr. no.6:138-143 '65. (MIRA 18:6)

KOST, A.N.; YUDIN, L.G.; BUDYLIN, V.A.

Nitration of the benzene ring of indole compounds. Zhur. VKHO
10 no. 4: 474-475 '65. (MIRA 18:11)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

ACC NR: AP6025591 SOURCE CODE: UR/0413/66/000/013/0021/0021

INVENTOR: Kost, A. N.; Lugovik, B. A.; Yudin, L. G.

ORG: none

TITLE: Preparation of 4-aryl-1,2,3,4-tetrahydroquinoline. Class 12, No. 183208. [announced by Chemical Faculty, Moscow State University im. M. V. Lomonosov (Khimicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 21

TOPIC TAGS: aryl tetrahydroquinoline, ~~preparation~~, dihydroquinoline, dihydroquinoline nitrogen derivative, benzene, anisole, aluminum chloride

ABSTRACT:
The proposed method for the preparation of 4-aryl-1,2,3,4-tetrahydroquinoline is based on the reaction of the homologs of 1,2-dihydroquinoline or its N-derivatives with aromatic hydrocarbons, e.g., benzene, or anisole, in the presence of aluminum chloride. [W.A. 50; CBE No. 10]

SUB CODE: 07/ SUBM DATE: 18Jun65/

Card 1/1 UDC: 547.831.3.07

ACC NR: AP6035690 (H,N) SOURCE CODE: UR/0413/66/000/019/0033/0034

INVENTOR: Kost, A. N.; Lugovik, B. A.; Yudin, L. G.

ORG: none

TITLE: Preparation of 1-formyl-1,2,3,4-tetrahydroquinoline. Class 12, No. 186483 [announced by Chemical Department, Moscow State University im. M. V. Lomonosov (Khimicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 33-34

TOPIC TAGS: formyltetrahydroquinoline ~~formyltetrahydroquinoline~~, quinoline, formic acid

ABSTRACT: To simplify and facilitate the process of the preparation of 1-formyl-1,2,3,4-tetrahydroquinoline from formic acid and quinoline and its homologs, the latter are treated with 77—85% formic acid vapor at 215—230°C. [W.A. 50]

SUB CODE: 07/ SUBM DATE: 13Nov65

Cord 1/1

UDC: 547.831.3.07

LUGOVIK, B.A.; YUDIN, L.G.; KOST, A.N.

Technology of the reaction of acetone with aniline. Zhur. prikl.
khim. 38 no.1:216-220 Ja '65. (MIRA 18:3)

RENNE, I.P.; TSYPINA, M.N.; YUDIN, L.G.

Experimental investigation of the accuracy and reliability of
dividing grids with thin graduation lines. Zav. lab. 30 no.11:
1387-1390 '64 (MIRA 18:1)

1. Tul'skiy politekhnicheskii institut.

KOST, A.N.; YUDIN, L.G.; TSYU YUY-CHZHU [Ch'iu Yu-chu]

~~3444-3449~~
δ -Ketonitriles in the Fischer reaction. Zhur. ob. khim. 34 no.10:
3444-3449 0 '64. (MIRA 17:11)

1. Moskovskiy gosudarstvennyy universitet im. Lomonosova.

YADIN, L. I.

NUCLEAR EXPLOSION 307/360

Yadaya geofizika; shornik statyi po ispol'szovaniyu radioaktivnykh izotopov v geologii i fizike (Nuclear Geophysics: Collection of Articles on the Use of Radioactive Radiation and Isotopes in Petroleum Geology). Moscow, Gosizdatlit, 1959. 370 p. Urata ally inserted. 4,000 copies printed.

Ed.: P.A. Alimov, Professor, Doctor of Geological and Mineralogical Sciences; Assoc. Ed.: A.P. Zinsharov, Tech. Li.: A.S. Polosina.

NOTE: This book is intended for petroleum geologists, geophysicists and scientists engaged in geological research who are interested in radioisotopic techniques of petroleum prospecting.

CONTENTS: The collection contains 25 articles compiled by staff members and aspirants of the Laboratory for Nuclear Geology and Geophysics of the Petroleum Institute (now the Institute for Geology and Mineralogy) of the Academy of Sciences USSR, the Laboratory for Nuclear Geology of the All-Union Scientific Research Institute of Geophysics, and the heads of councils for planning research projects for petroleum enterprises. The collection itself is a material on radioisotopic surveying in petroleum geology, describes radioisotopic instruments (counters, etc.) for registering neutrons and gamma rays, gives the results of research with models of rock strata, lithological analysis of a new method for effectively utilizing radioactivity in the exploration of oil and gas, and presents a method for determining the depth of holes in the samples from petroleum-survey bore holes, etc. Problems of application of tritium in tracing the movement of petroleum and water in a stratum are reviewed, as well as the results of studies in the nonabsorption of tritium. Finally, a new method of surveying based on measuring the radioactivity of the surface of a prospective petroleum deposit is described. No personal titles are mentioned. References accompany each article.

Grunberg, A.P., I.V. Matveyev, G.S. Zemanov, and A.D. Sokolov. Radioisotopic method "Atrav" and its use in Radioisotopic Oil and Gas Prospecting	279
Matveyev, I.V., and A.D. Sokolov. Scintillation Liquid Radiometer—An "Atrav" Variant for Aerial Prospecting	290
Grunberg, A.P. Experiment in the Gamma Registration of the Thorium and Radium Components of Gamma Radiation from Prospecting With Automobile-Mounted Radiometers	300
Philipov, Ye.M. Some Problems in the Methodology and Theory of the Gamma-Ray Method	306
Zolotov, A.Y. Effective Cross Sections of Chlorine for Slow Neutrons	312
Yerosolimskiy, B.G., and A.S. Ryzolnikov. A Method of Separating Oil- and Water-Bearing Strata, Based on Use of a Pulsating Neutron Source	317
Benadze, D.F., and A.I. Zhurav. A High Voltage Source of 100 Kv for Neutron Generators Used in Cased Wells	316
Yerosolimskiy, B.G., I.V. Matveyev, L.R. Vortish, Yu. S. Shchegolevich, and L.I. Yudin. A Small-Current Gasless Neutron Tube	321
Vortish, L.R., and B.G. Yerosolimskiy. A Laboratory Neutron Generator	316

AVAILABLE: Library of Congress

SUBMITTED: 01Sep62

DATE ACQ: 28Aug63

ENCL: 00

SUB CODE: NS

NO REL SERV

SEROV, A.F.; YUDIN, L.I.

Pulse duration stability in a generator with a secondary
emission tube. Prib. i tekhn. eksp. 10 no. 5:129-132 S-O '65.
(MIRA 19:1)

1. Institut yadernoy fiziki Sibirskogo otdeleniya AN SSSR,
Novosibirsk. Submitted Feb. 17, 1964.

YUDIN, L. I. 24c
 I 47304-55 EWT(m)/EPA(w)-2/EWA(m)-2 Pub-10 IJP(c) GS

ACCESSION NR: AT5007921

S/0000/64/000/000/0274/0287

AUTHOR: Bayyer, V. N.; Blinov, G. A.; Bondarenko, L. N.; Yerozolimskiy, B. G.;
 Korobeynikov, L. S.; Mironov, Ye. S.; Naumov, A. A.; Onuchin, A. P.; Panasyuk,
 V. S.; Popov, S. G.; Sidorov, V. A.; Sil'vestrov, G. I.; Skrinakiy, A. N.;
 Khabakhpashev, A. G.; Auslender, V. L.; Kiselev, A. V.; Kushnirenko, Ye. A.;
 Livshits, A. A.; Rodionov, S. N.; Synakh, V. S.; Yudin, L. I.; Abramyan, Ye. A.;
 Vasserman, S. B.; Vecheslavov, V. V.; Dimov, G. I.; Papadichev, V. A.; Protopopov,
 I. Ya.; Budker, G. I.

TITLE: Colliding electron-electron, positron-electron, and proton-proton beams

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963.
 Trudy. Moscow, Atomizdat, 1964, 274-287

TOPIC TAGS: high energy interaction, high energy plasma, particle physics, particle beam, charged particle beam

ABSTRACT: In the Institute of Nuclear Physics, Siberian Department, Academy of Sciences SSSR, programs on high-energy particle physics are mainly concerned with work on colliding charged particle beams. The Institute considers it unsuitable

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147304-65

ACCESSION NR: AT5007921

for its purpose to install huge accelerators whose construction requires large resources outlaid and long time. For work on colliding electron-electron, positron-electron, and proton-proton beams, three installations are being built, which are in various stages of readiness. Work on colliding electron beams was conducted at the institute (then a laboratory of the Institute of Atomic Energy named I. V. Kurchatov) in the Fall of 1956, after Kerst's report on accelerators with colliding proton beams of the FFAG type. By that time Soviet scientists had already acquired some experience in obtaining large electron currents; in particular, the mentioned laboratory had installed and then abandoned a device for the spiral storage of electrons (G. I. Budker and A. A. Naumov, CERN Symposium, 1, 76 (1956)), by which, subsequently, circulating currents of the order of 100 amperes were obtained. In 1957 two variants of this device were considered at the same time. The first one consisted of two accelerators with spiral storage and subsequent transition of the particles to synchrotron state in comparatively narrow paths. The second one had storage rings with constant magnetic field and frequent external injection because of the damping of the oscillations under the action of radiation. The first variant was more cumbersome; the second variant contained an element not developed at that time, namely a 100-kilovolt commutator of 10 kilo-amperes with nanosecond front. At the end of 1957, the first positive results were obtained

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L 47304-65

ACCESSION NR: AT5007921

with a packing discharger of 100 kilovolts, and work stopped on the variant with storage rings. Originally it was proposed to set up two devices: VEP-1 of 2×130 Mev energy, and VEP-2 of 2×500 Mev energy. The VEP-1 was considered as an actual model of an accelerator and as a device for conducting initial experiments at low energies. After the Panofsky report in 1958 on his work with colliding electron beams conducted in his laboratory at Stanford, construction ceased on 500-Mev storage paths and work was continued on the 2×130 -Mev installation. Instead of work on colliding electron beams with energies of 500 Mev, work at the end of 1958 was conducted with colliding positron-electron beams and the planning of the VEPP-2 device was begun, whose main elements are a strong-current electron accelerator and a high-vacuum storage path of 700 Mev energy. At the present time the VEP-1 and VEPP-2 are installed in Novosibirsk. The VEP-1 is in a state of neglect, but at the end of 1964 experiments will be begun with it. Installation of the VEPP-2 has been completed. To obtain a marked effect from the application of colliding proton beams, an accelerator is needed with an energy of at least 10 Gev. Since the ordinary accelerator at such energies is a very bulky machine, it was decided to combine the idea of colliding proton beams with the creation of an iron-less impulse accelerator with very large fields and a neutralized central busbar. This latter work of creating such a machine was reported by the authors at a Moscow conference

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ACCESSION NR: AT5007921

held in 1956. The presence of a field with two directions in an iron-less accelerator with central busbar permits the acceleration of protons toward opposite sides in one machine, which makes possible the collision of protons in case of a suitable race-track. At the present time the Institute is developing a proton device with a magnetic field of about 200 kilogauss and radius of 2 meters for a particle energy of 12 Gev in the beam (equivalent energy is around 300Gev). Tests are being conducted on models, and an effective method of injection by overcharging of negative ions is under study. Also under development are an impulse electric power supply system of 100 million joules capacity and an hf power supply. Since 1958 the Institute has been conducting theoretical investigations on the limits of applicability of quantum electrodynamics [V. N. Bayyer, ZhETF, 37, 1490 (1959), and UFN, 70, 619 (1962)] for the calculation of the radiational corrections to the electrodynamic cross-sections [V. N. Bayyer and S. A. Kheyfets, ZhETF 40, 613-715 (1961) and Nuclear Physics (in print)], and on other problems of high-energy particle physics that are connected with the preparation of experiments on colliding beams [V. N. Bayyer, I. B. Khriplovich, V. V. Sokolov, and V. S. Synakh, in ZhTF, 1961]. The present report takes up under the mentioned three main headings the following pertinent topics: the accelerator-injection, storage paths, electron-optical channel,

Card 4/5

L 47304-65

ACCESSION NR: AT500792

input and output systems, experiments on storage, proposed work, experimental set-up, physical layout of magnets, power supply, etc. Orig. art. has: 8 figures.

ASSOCIATION: Institute of Nuclear Physics, SO AN SSSR (Institute of Nuclear Physics, SO AN SSSR)

SUBMITTED: 26 May

ENCL: 00

SUB CODE: EE, NP

NO RET SOV: 012

OTHER: 003

MLL
Card 5/5

ACC NR: AP6022003

SOURCE CODE: UR/0120/66/000/003/0098/0101

AUTHOR: Yegorov, A. A.; Samokhin, I. A.; Panasyuk, V. S.; Yudin, L. I.

ORG: Nuclear Physics Institute, SO AN SSSR, Novosibirsk (Institut yadernoy fiziki SO AN SSSR)

TITLE: Synchronization of triggering pulses with a given high frequency voltage phase

SOURCE: Priory i tekhnika eksperimenta, no. 3, 1966, 98-101

TOPIC TAGS: electronic circuit, triggering circuit, particle accelerator

ABSTRACT: A circuit, based on a tube type limiter, is described. It is designed for synchronizing triggering pulses with a given phase of the hf sinusoidal voltage with an accuracy of ~ 1 nsec when the input voltage is varied from 70 to 200 V and when the line voltage is varied within $\pm 10\%$. The circuit consists of a section for fixing the hf voltage phase; a cascade for shaping phased pulses which, after amplification, trigger the output sections; and continuously variable delay lines. By means of special gate pulses the output pulses of the circuit can be coupled to any section of the hf voltage, either pulsed or continuous, at a frequency up to 100 Mc. The circuit can be used in various particle recording systems, in oscillography for the visual observation of individual sections of the hf voltage curve, and it can be incorporated in accelerator circuits. At present this synchronizing device with five output delay channels is used for triggering control and recording equipment of the Cord 1/2

UDC: 539.1.075

ACC NR: AP6022003

B-3M iron-free electron synchrotron. Orig. art. has: 3 figures.

SUB CODE: 09, 20/ SUBM DATE: 30Apr65/ ORIG REF: 002

Cord 2/2

ACC NR: AP7001936

SOURCE CODE: UR/0120/66/000/006/0039/0040

AUTHOR: Grits, Yu. A.; Panasyuk, V. S.; Ostreyko, G. N.; Yudin, L. I.

ORG: Institute of Nuclear Physics, SO AN SSSR, Novosibirsk (Institut yadernoy fiziki, SO AN SSSR)

TITLE: High-frequency power stage excitation circuit for feeding cyclic and linear accelerator resonators

SOURCE: Pribery i tekhnika eksperimenta, no. 6, 1966, 39-40

TOPIC TAGS: cyclic accelerator, linear accelerator, particle accelerator component

ABSTRACT:

In high-power common-grid pulse amplifiers for cyclic or linear accelerators, low efficiency and pulse distortion result from a mismatch between the driver and the power tubes where the second harmonic is undesirable. An excitation circuit is presented in which the fundamental and the second harmonics follow different paths at the power tube cathode input circuit. The interstage circuit between the driver and the power tube consists of a tuned split LC circuit (tuned to the fundamental frequency), two parallel cable sections assuring a high travelling wave ratio for the fundamental and a high impedance for the second harmonic (cable length is such that it acts as a quarter-wave cable for the second harmonic). The second harmonic is further trapped by LC circuits between

UDC: 621.3.084.872:621.384.61;621.384.62

ACC NR: AP7001936

the power tube cathode and ground. The described circuit was tested using a GK-5A power tube operating at 6.3 Mc in pulsed mode. The output pulse had a power of 3 Mw. Its duration and repetition frequency were 1 msec and 12 cps, respectively. It is claimed that the efficiency of this circuit is 60% greater than that of the simple common grid circuit. Orig. art. has: 4 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 02Dec65/ ORIG REF: 002/ ATD PRESS: 5111

Card 2/2

L 05642-67 EWI(m) IJP(c)

ACC NR: AF6021620

SOURCE CODE: UR/0089/66/020/003/0206/0210

AUTHOR: Budker, G. I.; Kiselev, A. V.; Kon'kov, N. G.; Naumov, A. A.; Nifontov, V. I.; Ostreyko, G. N.; Panasyuk, V. S.; Petrov, V. V.; Yudin, L. I.; Yasnov, G. I. 3/

ORG: none

TITLE: Starting of the B-3M ^{linear}synchrotron, used as an injector for a positron-electron storage ring

SOURCE: Atomnaya energiya, v. 20, no. 3, 1966, 206-210

TOPIC TAGS: synchrotron, ^{linear}particle accelerator, storage ring, cyclotron magnet/ VEPP-2 storage ring; B-3M synchrotron, IIL linear accelerator

ABSTRACT: The article describes an adjustment of a synchrotron with external single-curn injector and single-turn emission of electrons and with a specially constructed electromagnet. This pulsed synchrotron is designed to serve as an injector for the VEPP-2 storage ring for colliding positron and electron beams, designed and described by one of the authors (G. I. Budker, et al., in Trudy Mezhdunarodnoy konferentsii po uskoritelyam, Dubna, 1963 [Transactions of International Conference on Accelerators, Dubna, 1963], Atomizdat, 1964, p. 1065, and elsewhere). The article describes the synchrotron itself (Fig. 1), the magnet, two variants of capture into synchronism, and various test procedures. The injector for the B-3M synchrotron was an IIL pulsed linear accelerator. The injected electrons had energy 1 - 1.5 Mev (pulse duration ~7 nsec) and were accelerated to 50 Mev. The B-3M synchrotron makes it possible to

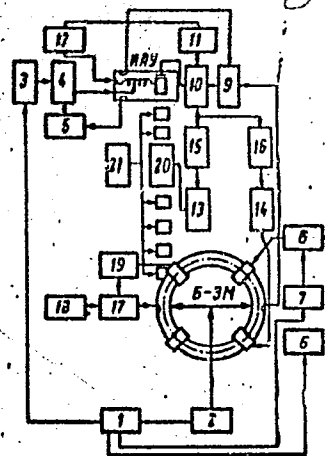
UDC: 621.384.612.12

Card 1/2

L 05642-67

ACC NR: AF6021620

Fig. 1. Block diagram of the apparatus of the B-3M synchrotron. 1 - Starting-pulse block, 2 - electromagnet excitation; 3 - hf generator modulator, 4 - injector hf generator, 5 - phase shifter, 6,7 - modulators, 8 - amplifier, 9 - computer, 10 - phase fixing block, 11 - delay line, 12 - electron gun pulse generator, 13 - electron shutter pulse generator, 14 - inflector pulse generator, 15,16 - delay line, 17 - voltage comparison, 18 - reference voltage, 19 - deflector pulse generator, 20 - electronic shutter, 21 - channel electron supply block.



operate the VEPP-2 storage ring at energies 100 - 130 Mev and an electron current ~100 mA, at an approximate repetition frequency 1 cps. The IUW injector was recently replaced by one with higher injection energy (2.5 - 3 Mev) and longer injection pulse (15 nsec). This increased the number of electrons in the storage ring by approximately a factor of 10. Orig. art. has: 10 figures.

SUB CODE: 20/ SUBM DATE: 22Nov65/ ORIG REF: 006

Card 2/2 *efr*

ACCESSION NO. APR 11 1984

nanosecond when four TGI-315 ...
results permitted building ...
up to 50 Hz which have operated reliably. "In conclusion, the authors wish to
thank A. A. Naumov for assistance in ...
Nesterikov for their valuable ...
their help in carrying out the work." Orig. and ...

ASSOCIATIONS: Machine yaderny ...
SO AN SSSR)

SUBMITTED: 21 Feb 64

21 Feb 64

NO REF SOV: 004

OTHER: 0

End 2/2

1. 09079-67

ACC NR: AP6021992

SOURCE CODE: UR/0120/66/000/003/0023/0024

AUTHOR: Gel'tsel', M. Yu.; Ostreyko, G. N.; Panasyuk, V. S.; Yudin, L. I. 27
B

ORG: Institute of Nuclear Physics, SO AN SSSR, Novosibirsk (Institut yadernoy fiziki SO AN SSSR)

TITLE: Modulation of the pulse front of high frequency voltage in a synchrotron resonator

SOURCE: Priory i tekhnika eksperimenta, no. 3, 1966, 23-24

TOPIC TAGS: synchrotron, circuit delay line, RC circuit, accelerator

ABSTRACT: The complexity of a high frequency generator, when a synchrotron generator must deliver large pulse power (up to 1 Mw) relative to its pulse width (~ 100 μ sec), is discussed. A device which can approximate a prescribed calculated curve can be constructed using a linear modulator of energetic pulses for supplying the anodes of a high frequency amplifier, consisting of passive elements. A schematic of such a device and the curve shape for the variation of high frequency voltage obtained with it is presented. The initial voltage U_0 with a front, corresponding to the front of the linear modulator, is formed with the aid of a potentiometer, which consists of load resistance R_H and resistance R . The entrance of the pulse across the delay line into the choke coil and the load is delayed in a time determined by the parameters of this

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UDC: 539.1.076

L 09079-67

ACC NR: AP6021992

line. The value of the resistance R is chosen to provide the necessary voltage in the resonator at the moment of injection, but it must be sufficiently large in order not to shunt the choke coil. The delay line consists of five T-shaped LC-components. The resistance of the delay line must equal that of the load. A compensation RC-circuit is included in the entrance to the delay line to prevent reflections from returning to the modulator which would result in a malfunction in its operation. Orig. art. has: 3 figures.

SUB CODE: 20/
09/

SUBM DATE: 26Apr65/

ORIG REF: 002

Cord 2/2 ⁶⁷⁷

L 34341-66 EWT(1)

ACC NR: AP6022004

SOURCE CODE: UR/0120/66/000/003/0101/0107

AUTHOR: Gal'tsel', M. Yu.; Panfilov, A. D.; Panasyuk, V. S.; Bobolev, S. S.; Yudin, L. I.

ORG: Institute of Nuclear Physics, SO AN SSSR, Novosibirsk (Institut yadernoy fiziki, SO AN SSSR)

TITLE: High-voltage nanosecond pulse generator

SOURCE: Pribery i tekhnika eksperimenta, no. 3, 1966, 101-107

TOPIC TAGS: nanosecond pulse, pulse generator, thyatron

ABSTRACT: A high-voltage pulse generator is described which develops 5--50 nsec square pulses of up to 50 kv with rise times from 1 to 5 nsec. The basic circuit consists of a thyatron, anode pulse-forming line, and a cathode output featuring a coaxial line with square-loop ferrite as a nonlinear pulse-forming element. In Fig. 1 is shown one design variant, and in Fig. 2 is shown the ferrite line detail. Another feature of the circuit is the balanced-T form of line termination, which has one arm shorted and the other terminated in a small lumped capacitance, providing a reflection-free pulse output. If the pulse were used, for example, to gate a particle beam passing between plane electrodes, the inherent capacity of the electrodes could act as the required terminating load. Design parameters, including coupling

Cord 1/2

UDC: 621.374.2

L 34381-66

ACC NR: AP6022004

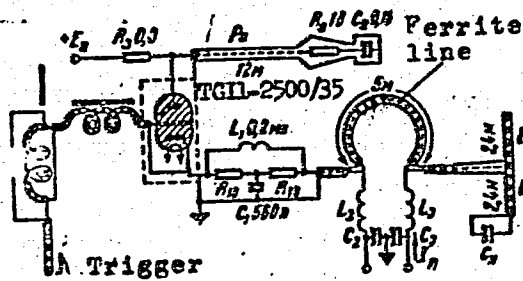


Fig. 1. Nanosecond pulse generator

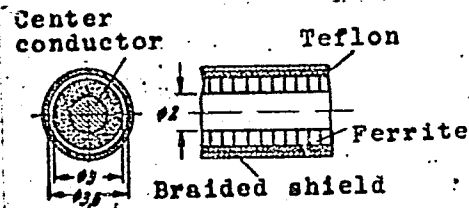


Fig. 2. Nonlinear ferrite line

and matching refinements, are treated at length. Circuit stability is rated good, with a firing-time jitter of not worse than 1 nsec rms. This design has been in use over a year, and has proven unusually reliable. Orig. art. has: 10 figures. [SH]

SUB CODE: 09/ SUBM DATE: 13Apr65/ ORIG REF: 005/ OTH REF: 002
ATD PRESS: 5034

Cord 212 92

L 4237-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) GS 5/0000/64/000/000/1065/1072 51
 ACCESSION NR: AT5007979 B+1

AUTHOR: Abramyan, Ye. A.; Bender, I. Ye.; Bondarenko, L. N.; Budker, G. I.;
Glagolev, G. B.; Kadyrov, A. Kh.; Meshkov, I. N.; Naumov, A. A.; Pal'chikov, V.
Ye.; Panasyuk, V. S.; Popov, S. G.; Protopopov, I. Ya.; Rodionov, Yu. I.;
Samoylov, I. M.; Skrinshiy, A. N.; Yudin, L. I.; Kon'kov, N. G.; Mostovoy, Yu. A.;
Nezhovanko, O. A.; Ostreyko, G. N.; Petrov, V. V.; Sokolov, A. A.; Timoshin, I. Ye.

TITLE: Work on the strong-current accelerators of the Nuclear Physics Institute,
SO AN SSSR. (I) Strong-current pulse accelerators with spiral storage of the elec-
trons. (II) Strong-current accelerators with one-revolution capture of the in-
jected electrons

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy.
Moscow, Atomizdat, 1964, 1065-1072

TOPIC TAGS: high energy accelerator, electron accelerator, electron beam, betatron,
plasma

ABSTRACT: The work on developing strong-current electron ring accelerators
was begun in 1965 by the authors at the Nuclear Physics Institute, Siberian Depart-
ment, Academy of Sciences SSSR, with the object of studying the possibility of
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ACCESSION NR: AT5007979

forming relativistic stabilized beams. In the laboratories of the Institute experimental studies were carried out on the four methods for obtaining large ring currents of relativistic electrons: (1) spiral method of storing the electrons in installations of the betatron type with subsequent betatron synchrotron acceleration (Budker G. I. CERN Symposium 1, 68 (1955)); (2) obtaining of limiting electron currents by means of the injection of electrons from a strong-current linear accelerator into a ring chamber of large aperture with subsequent synchrotron acceleration; (3) storage of electrons in tracks (parking orbits) with constant magnetic field by means of the multiple injection of electrons from another less strong-current accelerator; this method is utilized for the storage of electrons and positrons in experiments with colliding beams (expounded in detail by G. I. Budker in the present collection, p. 274); (4) obtaining of large electron currents by means of the acceleration of electrons by a ring plasma. The present report discusses the first two methods under the following topics: (I) pulsed iron-less betatron with preliminary charge storage (B-2 device); strong-current pulsed synchrotron B-2S; pulsed strong-current betatron with spiral storage (B-3 device). (II) iron-less one-turn strong-current synchrotron (BSB); strong-current pulsed synchrotron B-3H. Orig. art. has: 7 figures.

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L 4237-66

ACCESSION NR: AT5907979

ASSOCIATION: Institut yadernoy fiziki SO AN SSSR (Nuclear Physics Institute,
SO AN SSSR)

SUBMITTED: 26May65

ENCL: 00

SUB CODE: NF.

NO REF SOV: 001

OTHER: 001

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Card 3/3

L 4238-66 EWT(n)/EPA(w)-2/ENA(n)-2 IJP(c) GS
ACCESSION NR: AT5907980

S/0000/64/000/000/1080/1084 44
28
B+1

AUTHOR: Grits, Yu. A.; Iremashvili, D. V.; Naumov, A. A.; Pyatnitskiy, A. P.;
Chernov, A. A.; Yudin, L. I.; Yashov, G. I.; Panasyuk, V. S.; Ostreyko, G. H.

TITLE: Strong-current high-frequency pulse accelerators for one-revolution injection into a synchrotron

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963.
Trudy. Moscow, Atomizdat, 1964, 1080-1084

TOPIC TAGS: high energy accelerator, synchrotron, electron accelerator

ABSTRACT: Plans were begun in 1959 for the strong-current synchrotron B-3M with external injection of the electrons (Budker, G. I.; Naumov, A. A., et al., present collection, p. 1065). For this there was required an injector of electrons at currents of several tens of amperes and energy not less than 1 Mev. The time duration of the injected bunch of electrons (current pulse) must be sufficient for filling the chamber of the synchrotron, which amounts to about 20 nanoseconds in the case of equilibrium orbit length of 700 cm and relativistic electrons. The deviation from the mean energy of the electrons in a bunch must not exceed $\pm 0.5\%$. The beam pulse power of the injector amounts to tens of megawatts. In order to obtain

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ACCESSION NR: AT5007980

such high beam power, the electric field realizes energy that is accumulated over a period of time much larger than the duration of the electron pulse. G. I. Budker and A. A. Naumov have proposed several types of accelerators which are based on this principle, which are being developed in part at the Nuclear Physics Institute, SO AN SSSR. The necessity for the rapid construction of an injector of such a type prompted the utilization of the mentioned principle, in which a radio-engineering resonant circuit serves to store the electric field energy. A similar accelerator was proposed and described by a group of authors (Tolok, V. T.; Bolotin, A. I., et al. *Atomnaya energiya* 11, 41 (1961)). In order to increase the duration of the pulse of accelerated particle current for arbitrary rigid requirements on the homogeneity of the electrons relative to energy, it was required to greatly lower the frequency of the high-frequency voltage in comparison with the case discussed in the last mentioned work (Tolok, V. T., et al.). The development of a 3.5-Mev injector and current around 100 amperes was undertaken at the Physico-technical Institute, Academy of Sciences Georgian SSR, where a group of associates had proposed the design and construction of an injector forming the basis of the present development. Later, because of causes not in the control of the developers, the preparation of the injector began to fall considerably behind that of the accelerator itself. This forced a search for the possibility of producing

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ACCESSION NR: AT5007980

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injectors of such type simpler to design and construct with the object of ensuring the initial cycle of work on the construction of an accelerator. In a short time the mentioned Nuclear Physics Institute prepared an injector using a long coaxial line as the resonant circuit. With the help of this injector, work was begun on the investigation of the electron-optical properties of the accelerator and on the channelizing structure. After about one year this injector was replaced by a more effective one, the so-called small spiral injector, which was made in the mentioned Physicotechnical Institute of the Academy of Sciences Georgian SSR. Still underbuilt is the ultimate injector with electron energy of 3.5 Mev and current around 100 amperes. The work on the injector described in the present report was carried out by A. A. Naumov. It is discussed under the topics: block scheme (self-excited generator of sub-excitation, high-frequency generator, resonant injector circuit, pulse modulator, electron beam modulator, fixation of high-frequency phase, starting accelerator pulses); design and construction; electron guns; radio-engineering devices; measurement of the parameters. In the development of the different components of the injectors mentioned in this report a number of associates took part in the work: at the Nuclear Physics Institute, SO AN SSSR (V. A. Borisov, I. A. Samokhin, V. G. Gindenko, A. P. Afonin, A. V. Makiyenko, V. P. Alekseyev, L. I. Kol'chenko) and the Physicotechnical Institute, Academy of Sciences Georgian SSR (V. I. Vlahnevskiy, Ye. R. Abas-Ogly, V. Ye. Zelenin, M. I. Matrosov).

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L 4238-66

ACCESSION NR: AT5007980

Yu. Sh. Venediktov, V. N. Rybin, G. M. Sigidin). Orig. art. has: 3 figures.

ASSOCIATION: Institut yadernoy fiziki SO AN SSSR (Nuclear Physics Institute, SO AN SSSR)

SUBMITTED: 26May84

ENCL: 00

SUB CODE: NP

NO REF SOV: 003

OTHER: 000

1D
Beh
Card 4/4

TITLE: TUBE MANUFACTURE

CONCEPT: TECHNICAL EXPERIMENTATION

ABSTRACT: Secondary emission electron tube, video tube, etc.

anode characteristics making them well suited for use in

video tubes, etc. for the reason that they are

See also

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963110005-5

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963110005-5"

1 7721-66

1 1/2 device for energy synchronization of charged-particle ion
accelerator. Class 21, No. 177153 (App)

1 1/2

1 1/2 the actuation of the electron gun, the inflector, and other
optimum conditions for the capture of the beam

1 Cora 111

UPL: 021-585-15

YUDIN, L. N.

USSR / Pharmacology, Toxicology. Chemotherapeutic Agents.

U-7

Abs Jour : Ref. Zh.-Biol., No 2, 1958, No 8170

Author : Yudin, L. N.

Inst :

Title : Treatment of Metastatic Tuberculosis of the Eye with Streptomycin

Orig Pub : Oftalmolo. Zh., 1957, No 2, 114-117.

Abstract : No abstract.

Card : 1/1

Yudin, L.I.

S/169/61/000/011/027/065
D228/D304

AUTHORS: Alekseyev, P.A., Yerozolimskiy, B.G., Baspalov, D.F.,
Bondarenko, L.M., Boytsik, L.P., Popov, N.V.,
Khaustov, A.I., Romanovskiy, V.F., Shimelevich, Yu.S.
Shkol'nikov, A.S., and Yudin, L.I.

TITLE: The result of applying neutron impulse methods and
apparatus for investigating borehole logs

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1961, 34,
abstract 11A304 (V sb. Yadern. geofiz. pri poiskakh
polezn. iskopayemykh, M., Gostoptekhizdat, 1960, 3-20)

TEXT: A borehole impulse generator of neutrons is described toge-
ther with the method of impulse-neutron neutron-logging (INNL). A
description is given for the electronic layout of the borehole ge-
nerator of neutrons and the surface apparatus for impulse neutron
logging. During laboratory tests of the generator a stable mean neu-
tron yield of $\sim 2 \times 10^7$ neutr./sec. was obtained at 100 kv. of acce-
lerating voltage in the tube. The impulse duration amounted to 100

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The result of applying neutron ...

S/169/61/000/011/027/065
D228/D304

μsec, the transmission frequency being 400 c/s. The neutron generator was used in the commercial testing of INNL. INNL readings against oil-bearing beds exceed by 10 times those for aquiferous beds containing mineralized water, at a delay time of 1000 μsec. Certain impediments and limitations of thermal impulse neutron-logging in different oil- and water-saturated beds are indicated, and the requirements for the apparatus are stated. Further prospects are indicated for the application of impulse neutron generators. [Abstractor's note: Complete translation].

Card 2/2

ACC NR: AP6034234

SOURCE CODE: UR/0120/66/000/005/0156/0159

AUTHOR: Yegorov, A. A.; Panasyuk, V. S.; Yudin, L. I.; Ostreyko, G. N.

ORG: Institute of Nuclear Physics, SO AN SSSR, Novosibirsk (Institut yadernoy fiziki SO AN SSSR)

TITLE: Generator of high power pulses with complex shape

SOURCE: Priory i tekhnika eksperimenta, no. 5, 1966, 156-159

TOPIC TAGS: pulse generator, pulse shaper

ABSTRACT: A multistage generator of pulses with complex shape is described; the shape and amplitude of each segment of the pulse can be regulated. Each stage of the generator has three thyratrons: basic, extinguishing and correcting; each thyatron has its own power supply. Cathodes of basic and regulating thyratrons are connected to the load. The extinguishing thyatron shuts off the basic thyatron; the correcting thyatron, together with its associated RLC circuit either adds or subtracts from the current in the basic thyatron and permits the shaping of the output pulse. Outputs of all basic and correcting thyratrons are connected in parallel. Triggering of the basic, the extinguishing and the correcting thyatron controls the duration and amplitude of the output of each stage. In this manner each stage and its triggering control a time segment of the output pulse. The pulse generator is used to generate

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UDC: 621.374

ACC NR: AP6034234

excitation currents for ferrite-wound coils. In one instance, for example, a current pulse with the following characteristics was generated: from time $t = 90$ to $t = 250$ μsec the current generated by the first stage varied according to the expression $1 - e^{-at}$; from $t = 250$ to $t = 600$ μsec the current was controlled by the second stage and varied exponentially. Orig. art. has: 3 figures.

SUB CODE: 14/ ^{09/} SUBM DATE: 06Nov65/ ORIG REF: 001/ OTH REF: 001

Card 2/2

ACC NR: AT7004005

SOURCE CODE: UR/0000/66/000/000/0287/0290

AUTHOR: Grits, Yu. A.; Ostreyko, G. N.; Panasyuk, V. S.; Yudin, L. I.

ORG: Institute of Nuclear Physics, SO AN SSSR (Institut yadernoy fiziki SO AN SSSR); Physico-Technical Institute, GKAE SSSR (Fiziko-tehnicheskiy institut GKAE SSSR)

TITLE: High-frequency pulse generator with 8-Mw pulses intended for a high-power electron accelerator

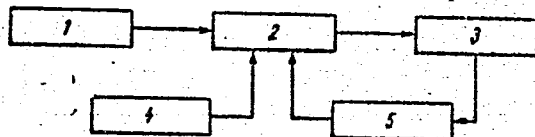
SOURCE: Mezhevuzovskaya konferentsiya po elektronnyim uskoritelyam. 5th, Tomsk, 1964. Elektronnyye uskoriteli (Electron accelerators); trudy konferentsii. Moscow, Atomizdat, 1966, 287-290

TOPIC TAGS: pulse generator, electron accelerator

ABSTRACT: A linear accelerator with a 40-amp, 1.3-Mev, $\pm 0.5\%$ -spread, 7-nsec pulse was developed and built in the Physico-Technical Institute, GKIAE SSSR. It was put into operation in the Institute of Nuclear Physics, SO AN SSSR, and has been used there for a single-circle injection into an electron synchrotron.

Card 1/2

ACC NR: AT7004005



Hf energy stored in a 6.4-Mc resonator is used for particle acceleration.

Modulator 1 (see figure) supplies voltage pulses to two-stage generator 2 anodes; feedback is effected via high-Q load 3;

adjustable coaxial line 5 is employed for selecting the feedback phase. A low-power oscillator 4 is intended for overcoming the resonator multipactor. A power of 8 Mw was obtained from the generator, with 25-kv anode pulses, during tests. However, in the above high-Q-load-excitation scheme, the generator develops 3.6 Mw at 16 kv. "The authors wish to thank A. A. Naumov for organizing this project, and V. I. Vishnevskiy, N. P. Rubinshteyn, and Ye. P. Mel'nikov for their participation in the alignment of the equipment." Orig. art. has: 2 figures.

SUB CODE: 69 / SUBM DATE: 06Mar66 / ORIG REF: 003

Card 2/2

YUDIN, L.N., inzh.

Transportation of precast asphalt concrete for bank-protection covering.
Transp. stroi. 12 no.11:34-36 N '62. (MIRA 15:12)
(Asphalt concrete) (Amu Darya River-Shore protection)

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963110005-5

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963110005-5"

25(7)

PHASE I BOOK EXPLOITATION

SOV/1981

Yudin, Mikhail Dmitriyevich

Tablitsy uglov dlya deleniya okruzhnostey na ravnyye chasti
(Tables of Angles for Indexing Circles) Moscow, Mashgiz,
1958. 175 p. 8,000 copies printed.

Ed.: B.M. Morozov, Engineer; Tech. Ed.: B.I. Model'; Managing
Ed. for Literature on Metal Working and Tool Making: R. D.
Beyzel'man, Engineer.

PURPOSE: This book is intended to facilitate the measuring of
angles involved in machining parts on jig boring machines
requiring accurate circle indexing. It is useful in measuring
laboratories for work on optical indexing heads and universal
microscopes equipped with universal indexing tables. It may
also be useful to engineers and technicians in machine-building
and instrument-making establishments.

Card 1/2

Tables of Angles (Cont.)

SOV/1981

COVERAGE: The tables given in this book contain the information necessary for the accurate indexing of a circle into 1-200 parts. They are correct to half a second. The horizontal and universal indexing tables are described in separate sections of the introduction. As part of the standard equipment of a jig boring machine these two detachable precision indexing tables permit marking out and boring holes in a polar coordinate system. No personalities are mentioned. There are no references.

TABLE OF CONTENTS: None give. The book is divided as follows:

Introduction	3
1. Horizontal dividing table	4
2. Universal dividing table	6
Tables of Angles for Indexing Circles	7

AVAILABLE: Library of Congress

GO/dfh
7-27-59

Card 2/2

YUDIN, Mikhail Dmitriyevich; MOROZOV, B.M., inzh., red.; MOBEL', B.I.,
tekhn. red.

[Tables of angles used for dividing circumferences into equal
segments] Tablitsy uglov dlia deleniia okruzhnostei na ravnye
chasti. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry,
1958. 200 p. (MIRA 11:9)

(Angle) (Circle)

34770

S/140/62/000/001/011/011
C111/C444

16.6100

AUTHOR: Yudin, M. D.
TITLE: Limit theorem for the sum of dependent random variables
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika,
no. 1, 1962, 172-177

TEXT: Let

$\eta_1, \eta_2, \dots, \eta_n$

(1)

be a sequence of random variables each of which can be dependent on all preceding ones; $|\eta_k| < C$ ($k=1,2,\dots$);

D $\sum_{k=1}^n \eta_k \rightarrow \infty$, for $n \rightarrow \infty$. Let

$$\xi_k = \frac{\eta_k - E\eta_k}{\sqrt{D \sum_{k=1}^n \eta_k}}$$

E being the mathematical expectation. Let $p(x_1, x_2, \dots, x_k)$ and

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C111/C444

Limit theorem for the sum of . . .

$p(y_1, y_2, \dots, y_k)$ be the probability densities of $(\xi_1, \xi_2, \dots, \xi_k)$,
 $(\eta_1, \eta_2, \dots, \eta_k)$ and $p(x_k, x_{k+1}, \dots, x_{n/k-1})$, $p(y_k, y_{k+1}, \dots, y_{n/k-1})$
be the conditional probability densities of the same variables under
consideration of the dependence on the preceding results.

Let $|p(y_{k+1}, \dots, y_{n/k}) - p(y_{k+1}, \dots, y_n)| \leq A_n$ (2)

for all n and k , where A_n is bounded. Further be

$$\varphi_{n-k} = \int \dots \int e^{it\zeta_{n-k}} p(x_{k+1}, \dots, x_n) dx_{k+1} \dots dx_n \neq 0 \quad (3)$$

where one integrates from $-\infty$ to $+\infty$, and where $\zeta_{n-k} = x_{k+1} + \dots + x_n$,
for all n and k ; $\sum_{k=1}^n D \xi_k$ be bounded for all n . Let $C_n = \frac{2C}{\sqrt{D \sum_{k=1}^n \eta_k}}$.

Card 2/3

Limit theorem for the sum of . . .

S/140/62/000/001/011/011
C111/C444

Under these suppositions the following theorem is proved:

Theorem: In order the distribution function of the random variables

$\sum_n = \xi_1 + \xi_2 + \dots + \xi_n$ for $n \rightarrow \infty$ converging to the Gaussian rule, it

is sufficient that $\lim_{n \rightarrow \infty} c_n \sum_{j=1}^n j(4C)^j = 0$.

This condition is satisfied especially for $C < \frac{1}{4}$.

There are 4 Soviet-bloc references.

ASSOCIATION: Shuyskiy gosudarstvennyy pedagogicheskiy institut
(Shuysk Pedagogical State Institute)

SUBMITTED: April 16, 1959

Card 3/3

YUDIN, M. F.

PRESLER, S. Ye.; TALMUD, D. I.; YUDIN, M. F.

"The Mechanical Properties of Monomolecular Layers Obtained by
Means of Two-Dimensional Polymerization and Condensation"

Zhur. Fiz. Khim., Vol. 14, No. 5-6, 1940.

YANOVSKIY, B.M.; GORBATSEVICH, S.V.; VOIKOV, N.A.; YUDIN, M.F., kand. tekhn.
nauk, otv. red.; ZABORDINA, A.A., tekhn. red.

[Absolute measurements of electric currents] Absolutnye izmereniya
sily toka. Moskva, Gos. energ. izd-vo, 1953. 124 p. (Leningrad,
Vsesoiuznyi nauchno-issledovatel'skii institut metrologii. Trudy,
no.15). (MIRA 11:5)

1. Direktor Vsesoyuznogo nauchno-issledovatel'skogo instituta
metrologii im. D.I. Mendeleeva (for Yudin).
(Electric currents--Measurements)

ERVAYS, A.V.; YUDIN, M.F.; RYSTSOVA, V.S.; VOLODIN, Ye.I.; KAZAKOV, V.F.

Reactions to K.S. Diachenko's article concerning the preparation of smooth surface samples. Stan. i instr. 24 no. 11-17-19 N '53. (MLHA 6:12)

1. Byuro vsaimozamenyayemosti moto-mekhanizirovannogo soyedineniya (for Ervays). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut meteorologii im. Mendeleeva (for Yudin). 3. Leningradskiy isntitut ekonomicheskikh issledovaniy im. V.H. Molotova (for Rystsova). 4. KhGIMIL i KharNITOMASH (for Kazakov).

(Surfaces (Technology))

TIKHODEYEV, P.M., prof.; YUDIN, M.F., kand.tekhn.nauk, otv.red.;
MALIKOV, M.F., prof., retsenzent; MAKHOVSKIY, V.G., prof.,
retsenzent; FRUMKIN, P.S., tekhn.red.

[Essays on standard (metrological) measurements] Ocherki ob
iskhodnykh (metrologicheskikh) izmereniyakh. Moskva, Gos.
nauchn.-tekhn.izd-vo mashinostroit.i sudostroit.lit-ry 1954.
215 p. (Leningrad. Vsesoyuznyi nauchno-issledovatel'skii
institut metrologii, no.21) (MIRA 13:3)

1. Direktor Vsesoyuznogo nauchno-issledovatel'skogo instituta
metrologii imeni D.I.Mendeleeva (for Yudin).
(Mensuration)

YUDIN, M.F.

MALIKOV, M.F.; YUDIN, M.F.

E.G. Shrankov's 60th birthday. Izv. tekhn. no.1:59 Ja-F '55.
(Shrankov, E.G., 1894--)

(MIRA 8:9)

9
CHERNYSHEV, Ye. T.; YUDIN, M. F.

B.M. Ianovskii's 60th birthday. Izv. tekhn. no. 1:59 J8-F '55.
(MIRA 8:9)

(Ianovskii, Boris Mikhailovich, 1894--)

YUDIN, M.F.

New developments in the determination of X-ray, gamma ray and
radioactivity units. Izv. tekhn. no.1:31-35 Ja-P '55.
(Radiation) (Units) (MLRA 8:9)

YUDIN, M.F.

More on the determination of the roentgen unit. Izv.tekh. no.1:
18-19 Ja-F '56. (MLRA 9:5)
(X rays--Measurement) (Gamma rays--Measurement) (Radiography)

YUDIN, M. F.

SOV/112-59-3-5251

21(3)

Translation from: Referativnyi zhurnal. Elektrotehnika. 1959, Nr 3, p 135 (USSR)

AUTHOR: Aglutsev, K. K.; Balon, Z. P.; Dzhalepov, B. S.; Karavayev, F. M.; Karamyan, A. S.; Konstantinov, A. A.; Ostromukhova, G. P.;

Prokopyev, P. P.; Rusinova, S. A.; Sumbayev, O. I.; Khol'nova, Ye. A.;

Shostopalova, S. A.; Yudin, M. F., and Yartitsyna, I. A.

TITLE: Metrology of Penetrating Radiations

(Metrologiya pronikayushchikh izlucheniy)

PERIODICAL: V sb.: Atomn. energiya v mirovyykh teyakh. Gosenergizdat.

1957, pp 145-181

ABSTRACT: Projects are described of the Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii (All-Union Scientific Research Metrology Institute) imeni D. I. Mendeleeva on standardization of measures in the ionizing-radiation field, and on the construction of standard and reference outfits for reproducing the fundamental units in the whole range of energies and intensities of radiations of all types. The following outfits are described: (1) a standard reproducing

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Metrology of Penetrating Radiations

the roentgen in the range of 40-300 Kev; (2) a reference outfit for measuring in roentgens of electromagnetic-radiation doses having the quantum energy of 300-1,500 Kev; (3) an outfit for measuring in roentgens the electromagnetic-radiation doses with quantum energy of 3-20 Kev with an error of 1%; (4) two standard outfits for measuring radium gamma-equivalents; (5) differential lead-hall gamma-calorimeters for measuring the activity of various preparations on the basis of their gamma radiation; (6) an isothermal calorimeter operating on the principle of liquid-nitrogen evaporation for measuring the activity of beta preparations; (7) a differential alpha-calorimeter for measuring the activity of radium preparations. An activity-measurement method by counting the number of particles emitted by a preparation is being developed in two directions: counting of particles in a definite solid angle and the same in the total solid angle by means of "4π-counters." The beta-particle counter with a definite angle permits measuring preparations with an activity of 10^{-8} - 10^{-5} curie with an error of 4-6%. Two alternate designs of "4π-

Card 2/3

SOV/112-59-3-5251

Metrology of Penetrating Radiations

counters" are described. One of them permits measuring beta preparations with an activity of 10^{-10} - 5×10^{-8} curie with an error of 2-4%, and the second, 5×10^{-11} - 5×10^{-7} curie with an error of 1-3%. The outfits have been built for measuring neutron streams from 10^6 down to a few tens of neutrons per sec. A gamma-spectrometer "Electron" with an improved focusing has been built for investigation of gamma spectra in the energy range of 800-1,000 Kev. To conduct investigations in the range of 120-1,300 Kev, a 2-meter long crystal-diffraction gamma spectrometer of the Debye-Scherrer type has been built. Also, a magnetic spectrometer analyzing photoelectrons has been built for the range of 200-500 Kev. Measuring the half-life from a few hours to a few years is made by two methods: the method of successive measurements of gamma-equivalent preparations and the differential-calorimeter method. The results of half-life measurements for a number of isotopes are tabulated.

A.C. 2.

Card 3/3

YUDIN, M.F.

Reproduction of the roentgen in the soft X-ray region. Truly
VNIIH no.30:87-108 '57. (MIRA 12:1)
(X rays--Equipment and supplies)

AGLINTSEV, K.K.; OSTROMUKHOVA, G.P.; YUDIN, M.F.

Model unit for roentgen measurement of gamma radiation with
quanta energies up to 1.5 Mev. Trudy VIIIN no.30:109-116
'57. (MIRA 12:1)
(Gamma rays--Measurement) (Ionization chambers)

On the New
tivity"

GOST

SOV/115-58-6-34/43
"Units of X-Ray and Gamma-Radiation and Radioac-

which one milligram-equivalent of radium is the unit. There are 12 references, 10 of which are Soviet, 1 English and 1 German.

ASSOCIATIONS: Komitet standartov, mer i izmeritel'nykh priborov (Committee for Standards, Measures and Measuring Devices). Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I. Mendeleyeva (All-Union Scientific Research Institute of Metrology imeni D.I. Mendeleev)

Card 2/2

AUTHOR: Yudin, M.F. SOV/115-58-6-34/43

TITLE: On the New GOST "Units of X-Ray and Gamma-Radiation and Radioactivity" (O novom GOSTe "Yedinitsey rentgenovskogo i gamma-izlucheniya i radioaktivnosti")

PERIODICAL: Izmeritel'naya tekhnika, 1958, Nr 6, pp 84-86 (USSR)

ABSTRACT: The Committee for Standards, Measures and Measuring Devices approved the new GOST 8848-58 "Units of X-Ray and Gamma-Radiation and Radioactivity" which is valid since 1 Jan 59. It replaces the General Standard OST VKS 7159 "Units of Radioactivity" and OST VKS 7623 "Units of X-Ray Radiation". The OST 5159 "Units of Radium" is changed. The new GOST has been developed by the All-Union Scientific Research Institute of Metrology imeni D.I. Mendeleev and has been reviewed by many institutes, organizations and scientists. The recommendations of the International Commission on Radiological Units and Measurements [Ref 1] have been considered. The Standard differentiates between the dose of radiation and the adsorption dose of radiation. The unit for the adsorbed dose is one rad equal to 100 erg per 1 g of irradiated substance. The concept of a radium gamma-equivalent of the preparation has also been introduced, of

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Yudin, M. F.

3/23/60/500/009/017/017
ACB/5001
Translation from: Reproductive Journal, Maternity and Gynecology, No. 9, p. 235,
p. 234

AUTHORS:

7153.

Practical

Var. n. 1. Anti-control. 1953, No. 23 (93), pp. 135-158

The authors investigate the work which was carried out up to 1959 at the VNIIT, examining the utility of measures and devices in the field of technical measurements. One of the main problems in the field of technical measurements is the problem of the measurement of activity of radioactive preparations, the method of absolute counting of the number of charged particles emitted by the preparation, the counting chamber method not being presented. The authors describe the method of the measurement of γ -equivalents of α -emitters, the method of the measurement of absolute measurements of neutron fluxes which can be put at the basis of the calibration of the device. They enumerate

Achievements and Development Prospects of the Metrology of Ionizing Radiation
The trends of further work in the field of metrology of ionizing radiation. There
are 9 figures. 25 references.

10

PL-V-3.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

Wd, Dept. of Mining Radiation,
Box 272
A-22 Post Secondary in 21 months

67819

SOV/115-60-1-21/28

(24,6520

AUTHOR: Yudin, M. F.

TITLE: A Unit for Measuring a Neutron Dose

PERIODICAL: Izmeritel'naya tekhnika, 1960, Nr 1, pp 51-53 (USSR)

ABSTRACT: The author discusses neutron dose measurement units suggested by different authors /Ref. 1-97 recommended by the International Commission for Radiological Units and Measurements /Ref. 27. The author suggests a dose unit "ned" (Neutroonnaya yedinit'sa dozy - neutron-unit of dose) analogous to the dose of X-ray or gamma-ray could be used. When measuring the neutron dose in "neds" by means of ionization chambers made of tissue-equivalent plastics and filled with a tissue-equivalent gas, the absorption dose may be easily calculated. These ionization chambers may be calibrated in the fields of gamma-rays with known dose powers. The author concludes that: 1) 1 ned equals 0.935 rad; 2) the measuring method guarantees the measurement

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SOV/115-60-1-21/28

A Unit for Measuring a Neutron Dose

of the neutron dose as well as of the dose powers.
Its error is between 5 and 10%. There are 9 referen-
ces, of which 4 are Soviet and 5 English.

Card 2/2

The use of scintillation detectors :

34286
S/589/61/000/055/006/006
D037/D113

spherical scintillation detector permits counting fast-neutron fluxes with a density of $10 \text{ n/cm}^2/\text{sec}$ and more, with an error of $\pm (10\div 15)\%$. The advantage of the new devices is their good fast-neutron sensitivity, the disadvantage - the dependency of the readings on the direction of neutron propagation and the independence of the readings on the neutron energy only in rather narrow energy intervals. There are 11 figures and 21 references: 4 Soviet-bloc and 17 non-Soviet-bloc. The four English-language references are: C. J. Wright, Proc. Phys. Soc., v. B69, 1956, p 358; A. M. Hoogluboom, Nucl. Instr., v. 3, 1958, p 57; J. Skojoldebrand, Nuclear Energ., v. 1, 1955, pp 299-305; J. Griffiths, a.o., Can. Journ. Phys., v. 37, 1959, pp 858-885. ✓

ASSOCIATION: VNIIM

SUBMITTED: May 26, 1960

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S/589/61/000/055/006/006

D037/D113

The use of scintillation detectors ...

with a semitransparent photocathode. The maximum sensitivity of the latter ranges between 3500 and 6000 Å. In order to reduce the effectiveness of γ -radiation recording, 7 mg/cm² thick ZnS (Ag) layers were placed between the plates. The plexiglass serves as proton emitter and light pipe. An amplifier with a "СИРЕНЬ" ("Siren") discriminator and a PE-10,000 (PS-10,000) scaling unit are used to count the neutron bursts. With the aid of such a multilayer detector, the neutron fluxes from a (Po-~~210~~-Be)-source were counted (Fig. 5). The detector's efficiency is proportional to a neutron energy of 0.2 to 5 Mev with 10% accuracy, beginning with a neutron dose rate of 0.1 μ n/sec and more. The experiments showed that this detector at a discrimination threshold of 6 v is not Co⁶⁰ γ -radiation sensitive and not slow-neutron sensitive within the counting error limit (10%). (2) A spherical scintillation counter (Fig. 9) in which tissue-equivalent plastics are used as proton emitter. The internal surface is coated with 20 mg/cm² ZnS (Ag) and the sphere fastened to the casing of the photomultiplier. The counter attains its maximum sensitivity when the axis of the neutron flux coincides with the axes of the light pipe and the photocathode. At a discrimination threshold of 5 v, this counter is neither Co⁶⁰ γ -radiation sensitive nor slow-neutron sensitive. The

Card 2/3

34286

S/589/61/000/055/006/006
D037/D113

26.2263 (a/k/a 4716)

AUTHORS: Slepyshev, S. I.; Yudin, M. F.

TITLE: The use of scintillation detectors in fast-neutron dosimetry

SOURCE: USSR. Komitet standartov, mer i izmeritel'nykh priborov.
Trudy institutov Komiteta, no. 55(115), Moscow, 1961. Issle-
dovaniya v oblasti izmereniya ioniziruyushchikh izlucheniya,
74-80

TEXT: Scintillation methods of counting fast-neutron fluxes are discussed and two new fast-neutron scintillation detectors are described. Fine-crystalline zinc sulfide activated by an optimum layer of 20 mg/cm² of ZnS (Ag) was used as scintillator. The maximum fluorescence intensity of this scintillator is within the 4500-5200 Å range. In initial experiments, the scintillator was fixed to a 4.5 mm polyethylene plate by transparent lac which considerably affected the fast-neutron counting and therefore was replaced by a solution of plexiglass in dichloro-ethane. The following two fast-neutron detectors were built: (1) A fast-neutron detector (Fig. 3) of 1.5 mm plexiglass plates connected with an ФЭУ-19 (FEU-19) photomultiplier

Card (1/5) 3

21826

S/115/61/000/004/005/010
B129/B206

21.8100

AUTHORS: Yudin, M. F. and Filippov, O. A.

TITLE: Tissue-equivalent dosimeter for fast neutrons

PERIODICAL: Izmeritel'naya tekhnika, no. 4, 1961, 37-42

TEXT: This study deals with the development of a dosimeter which would permit measuring the doses produced by fluxes of fast neutrons of the density of 20-30 n/cm².sec and above. The dependence of the indications on the neutron energy is also to be investigated. In this group of instruments, the tissue-equivalent ionization chambers by Failla and Rossi and the tissue-equivalent proportional counter by Hurst have the best characteristics. The difficulty of separating the gamma-ray dose from the neutron dose was a drawback of the first type of instruments; the instruments of the second type do not record the protons, the energy of which lies below the discrimination threshold. The average, soft, biological tissue of the composition (C₅H₄₀O₁₈N)_n can be represented for the fast neutrons by a material containing, for instance, 10% by weight of hydrogen and 90% by weight of carbon. This material can be obtained by Card 1/5