MURADOVA, G.A.

SARKISOV, G.Kh., professor; BUNYATOV, N.N.; MURADOVA, G.A.

Late amputations in postwar injuries. Khirurgiia no.4:79 Ap '54. (MLRA 7:6)

1. Iz kliniki vosstanovitel'noy khirurgii Bakinskogo nauchno-issledovatel'skogo instituta ortopedii i vosstanovitel'noy khirurgii.

(WOUNDS AND INJURIES,
*gunshot, of extremities, amputation)
(AMPUTATION,
*extremities, in gunshot wds.)

MURADOVA, G.A., mladshy nauchnyy sotrudnik

Tenoplastic supracondyloid amputation of the hip in patients with obliterating endarteritis. Azerb.med.zhur. no.2:40-44 F '60. (MIRA 13:5)

1. Iz Bakinskogo nauchno-issledovatel'skogo instituta travmatologii i ortopedii.
(EXCISION OF HIP) (ARTERIES--DISEASES)

MURADOVA, G.A.; SERGIYENKO, S.R.; KOROTKIY, A.G.

Spectral characteristics of high molecular weight of hydrocarbons of Aligul'skaya oil. Izv. AN Turk.SSR. Ser. fiz.-tekh., khim. i geol. nauk no.2:16-23 '63. (MIRA 17:8)

1. Fiziko-tekhnicheskiy institut AN Turkmenskoy SSR i Institut khimii AN Turkmenskoy SSR.

SERGIYENKO, S.R.; [illegible], G.A.; [illegible]

Molecular structure of the high-molecular weight hydrocarbons of Koturtepe oil. Izv. AN Turk. SSR. Ser. fiz.-tekh., khim. i geol. nauk no.5:46-60 '64.

1. Institut khimii AN Turkmenskoy SSR.

SERGIYENKO, S.R.; GARBALINSKIY, V.A.; PETROVA, A.A.; CHIROVA, Ye.V.; MURADOVA, G.A.

Composition and properties of hydrocarbons from condensates of the Iolim deposit. Izv. AN Turk. SSR. Ser. fiz.-tekh., khim. i geol. nauk no.1:37-47 '65. (MIRA 18:7)

1. Institut khimii AN Turkmenskoy SSR.

MURADOVA, M.D., Cand Biol Sci -- (diss) "Physiology of the cotton plant in different types of salinity under conditions of Azerbaydzhan." Kirovabad, 1959, 18 pp (Min of Agr AzSSR. Azerbaydzhan Agr Inst) 150 copies (KL, 35-59, 113)

RASULOVA, S.M.; KHALILOVA, N.G.; DZHAFARLI, R.M.; MURADOVA, S.A.; ZUL'FUGAROV, Z.G.

Investigation of means of increasing stable activity of the cracking catalyst "khanlarit" [in Azerbaijani with summary in Russian]. Izv. AN Azerb. SSR. Ser. fiz.-tekh. i khim. nauk no.5:81-95 '58. (MIRA 12:1)
(Cracking process) (Catalysts)

ZUL'FUGAROV, Z.G.; MURADOVA, S.A.; GUSEYNOVA, Z.A.

Manufacture of vitreous magnesium silicate catalysts for the cracking of heavy petroleum fractions [in Azerbaijani with summary in Russian]. Izv. AN Azerb. SSR. Ser. fiz.-tekh. i khim. nauk no.1: 113-124 '59. (MIRA 12:6)
(Cracking process) (Magnesium silicates) (Catalysts)

5 1190

24449
S/081/61/000/006/015/015
B101/B201

AUTHORS: Zul'fugarov, Z. G., Zul'fugarova, L. Sh., Muradova, S. A., Shirinova, E. B., Agdamskiy, T. A., Aliyev, A. S.

TITLE: Study of the activity of chromium aluminum magnesium silicate catalysts in the polymerization reaction of ethylene to polyethylene

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 6, 1961, 711-712, abstract 6P87 (6R87) ("Azerb. khim. zh.", 1960, no. 2, 107-115)

TEXT: A study has been made of new types of chromium aluminum magnesium silicate catalysts (Cat) in the polymerization of ethylene to polyethylene, and of the activity of Cat as dependent upon the method of their introduction into the chromium oxide. The activity of Cat has been shown essentially to depend on the method of synthesis, the chemical composition of the carriers having no appreciable effect upon such activity. The optimum ratio of Cr^{6+} and Cr^{3+} oxides in the chromium metasilicate catalysts concerned has been found to be 40-55 : 45-60; the maximum polymer yield per

Card 1/2

Study of the activity of chromium... S/081/61/000/006/015/015
B101/B201

g of Cat has been 92 and 114 g, respectively. No relationship has been observed between the catalytic activity of Cat and their thermograms, their porosity, specific pore volume, and apparent density. All the polymers obtained have been found to have a highly crystalline structure. The authors assumed the active part of chromium catalysts to consist of salts of chromous acid or acid salts of chromic acid. [Abstracter's note: Complete translation.]

Card 2/2

ZUL'FUGAROVA, L.Sh.; SHERIFOVA, E.B.; MURADOVA, S.A.; AGDAMSKIY, T.A.
ZUL'FIKAROV, Z.G.

Effect of the chemical composition of iron carrier and promoter on the activity of chromium oxide catalysts. Azerb.khim.zhur. no.4:85-91 '61. (MIRA 14:11)

(Polymerization)
(Catalysts)

ZUL'FUGAROVA, L.Sh.; MURADOVA, S.A.; SHIRINOVA, E.B.; AGDAMSKIY, T.A.; SMIRNOVA, V.Ye.; VEZIROVA, V.R.; ZUL'FUGAROV, Z.G.

Effect of the conditions of polymerization and of the porous structure on the activity of chromium-aluminum-magnesium silicate catalysts. Azerb.khim.zhur. no.5:87-90 '61. (MIRA 15:5)

(Polymerization) (Porosity) (Catalysts)

L 29530-66 EWP(j)/EWT(m)/T IJP(c) RM

ACC NR: AR6004374 SOURCE CODE: UR/0081/65/000/015/S027/S027

AUTHOR: Zul'fugarov, Z. G.; Zul'fugarova, L. Sh.; Muradova, S. A.; Alimardanov, G. I. 42 B

TITLE: Effect of the chemical composition of the carrier and promoter on the catalytic activity and form of chromium in polymerization

SOURCE: Ref. zh. Khimiya, Abs. 15S160

REF SOURCE: Sb. Nauchn. osnovy podbora i proiz-va katalizatorov. Novosibirsk, Sib. otd. AN SSSR, 1964, 288-295

TOPIC TAGS: ~~polymer~~, polymerization catalyst, chromium oxide, nickel, cobalt, iron, CHROMIUM, CHEMICAL COMPOSITION

ABSTRACT: The effect of the chemical composition of the carrier, the amount of Cr^{+3} in hydrogel, Cr^{6+}, K_2CrO_4, Ni, Co and Fe on the activity and form of chromium oxides as a compound in chromalumosilicate, chromalumomagnesiumsilicate and a chromomagnesiumsilicate catalyst, were studied and the relationship between the factors determined. The synthesis of the carriers was carried out by coprecipitation or substitution, and the synthesis of catalysts, by the method of

Card 1/2

L 29530-66

ACC NR: AR6004374

depositing chromium hydroxide on the carrier and by enriching the chromium-containing carrier with chromium anhydride. The activation of the catalyst was performed by oxidizing it by air for 5 hours at 480-510° with a speed of air flow equal to 400 volume units of air for one volume of catalyst per hour. The yield of polyethylene per 1kg of the catalyst obtained in one working cycle was used as a criterion of catalyst efficiency. V. Agasandyan.

SUB CODE: 07/ SUBM DATE: none

Card 2/2 US

MURADOVA, S.G.

46

PHASE I BOOK EXPLOITATION SOV/6195

Nauchnaya konferentsiya institutov khimii Akademiy nauk Azerbaydshanskoy, Armyanskoy i Gruzinskoy SSR. Yerevan, 1957.

Materialy nauchnoy konferentsii institutov khimii Akademiy nauk Azerbaydzhanskoy, Armyanskoy i Gruzinskoy SSR (Materials of the Scientific Conference of the Chemical Institutes of the Academies of Sciences of the Azerbaydzhan, Armenian, and Georgian SSR) Yerevan, Izd-vo AN Armyanskoy SSR, 1962. 396 p. 1100 copies printed.

Sponsoring Agency: Akademiya nauk Armyanskoy SSR. Institut organicheskoy khimii.

Resp. Ed.: L. Ye. Ter-Minasyan; Ed. of Publishing House: A. G. Sikuni; Tech. Ed.: G. S. Sarkisyan.

PURPOSE: This book is intended for chemists and chemical engineers, and may be useful to graduate students engaged in chemical research.

COVERAGE: The book contains the results of research in physical, inorganic, organic, and analytical chemistry, and in chemical engineering, presented at the Scientific Conference held in Yerevan, 20 through 23 November 1957. Three reports of particular interest are reviewed below. No personalities are mentioned. References accompany individual articles.

TABLE OF CONTENTS:

PHYSICAL CHEMISTRY

MURADOVA, Shikufa Mamed kyzy; TARANKOV, V.V., red.

[Resources for offshore oil well drilling; practices of the No.1 boring unit of the Neftyanye Kamni region] Reservy burovykh rabot na more; opyt raboty kontory bureniia No.1 Neftianye Kamni. Baku, Azerbaidzhanskoe gos.izd-vo neft. i nauchno-tekhn.lit-ry, 1957. 125 p. (MIRA 10:12)
(Neftyanye Kamni region--Oil well drilling, Submarine)

MURADOVA, Sh.M.

Reducing the cost of offshore oil well drilling [in Azerbaijani with summary in Russian]. Azerb.neft.khoz. 36 no.1:45-48 '57. (MLRA 10:5)

(Oil well drilling, Submarine)

MURADOVA, Sh.M.

Simplification of the well structure is an important factor in reducing drilling cost. Azerb. neft. khoz. 36 no.12:41-42 D '57. (MIRA 11:3)

(Oil well drilling--Prices)

KHVICHIYA, A.T.; SAMKHARADZE, S.G.; MURADOVA, Z.A.

Studying the gaseous phase in the production of ore-coke.
Trudy GPI [Gruz.] no.4:189-[illegible] '62 (MIRA 17:8)

KHVICHIYA, A.T.; [illegible]MKHARADZE, S.G.; MURADOVA, Z.A.

Analysis of the behavior of phosphorus during the sintering of calcium phosphate with coal. Izv. vys. ucheb. zav.; chern. met. 8 no.12:17-21 '65 (MIRA 18:1)

1. Gruzinskiy politekhnicheskiy institut.

MURADYAN, A.A.; SARUKHANYAN, N.G.

Growing winter grain crops in the Alpine zone [in Armenian with summary in Russian]. Izv.AN Arm.SSR.Biol.i sel'khoz.nauki 6 no.10: 73-76 '53. (MLRA 9:8)

(Sisian District--Wheat)

ZOLOTNITSKAYA, S.Ya.; AKOPYAN, G.O.; MELKUMYAN, L.S.; MURADYAN, A.A.

New plants, producents of alkaloids with tropolone ring, from the flora of Armenia. Dokl. AN Arm. SSR 41 no.3:164-170 '65. (MIRA 18:11)

1. Botanicheskiy institut AN ArmSSR. Submitted April 10, 1965.

MURADYAN, A.A.; SARUKHANYAN, N.G.

Study of seed flax cultivation [in Armenian with summary in Russian]. Izv.AN Arm.SSR.Biol.i sel'khos.nauki 7 no.1:101-104 Ja '54. (MLRA 9:8)

(Armenia--Flaxseed)

MURADYAN, A.G., Engr.

"Evaluation and Measurement of Nonlinear Distortions of a Long-Distance Communications Trunk." Sub 27 Jun 51, Moscow Electrical Engineering Inst of Communications.

Dissertations presented for science and engineering degrees in Moscow during 1951

SO: Sum. No. 480, 9 May 55

MURADYAN, A.G.

USSR/ Electronics - Transistors

Card : 1/1

Authors : Muradyan, A. G., Cand. of Tech. Sciences, Sr. Scient. Corresp. of the TsNIIS (Central Scient.- Research Inst. of Communications)

Title : Transistors circuits

Periodical : Vest Svyaz, 5, 30 - 31, May 1954

Abstract : Basic parameters and characteristics of point-contact and junction type transistors are given. Three methods of switching these triodes into amplifier circuits are analyzed and general equations are included for determining the coefficients of the applications by a current, a voltage or by a power. Input and output resistances for all three methods are determined. Diagrams.

Institution : ....

Submitted : ....

MURADYAN, A.G.

Gurov V.S. and Muradyan, A.G.

"Crystal Iriods in Long Distance Wire Devices." (Kristallicheskiye Iriody v Apparature provodnoi svyazi.) M.Svyaz'izdat, 1955. 52 Str.

Muradyan, A. G.

USSR/Radiophysics - Application of Semiconductor Instruments, I-10

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35368

Author: Muradyan, A. G.

Institution: None

Title: Negative Feedback in Semiconductor Amplifiers

Original Periodical: Elektrosvyaz', 1956, No 6, 8-13

Abstract: Discussion of series and parallel feedback in transistor amplifiers. Design equations and several application examples are given.

Card 1/1

MURADYAN, A.G.

SUBJECT	USSR / PHYSICS	CARD I / 2	PA - I539
AUTHOR	Author not mentioned.		
TITLE	The Scientific All Union Session (held in connection with "Broadcasting Day").		
PERIODICAL	Radiotechnika, II, fasc. 9, 74-79 (I956)		
	Issued: I9.IO. I956		

Z.S. CERNOV delivered a report concerning the results obtained on the occasion of the investigation of spärstrons, which are new tube-type devices with propagating waves and electrostatic focussing of electron currents.

E.D. NAUMENKO spoke about the results obtained by the working out of laboratory models of reflecting klystrons for measuring purposes.

V.A. KLJAZKIN discussed the compensation method of coping with impulse disturbances in a wireless set. He also described ways and means for the practically complete elimination of impulse disturbance by compensation methods.

B.I. RASSADIN pinted out the experimentally confirmed advantages of a signal transmission in a frequency band in four-channel systems in radio telephone- and telegraph communication. He recommendéd a method by means of which nonlinear distortion can be considerably diminished.

A.P. ANGOFOROV demonstrated two basic principles of construction as well as the construction of television tubes for the production f a direct representation of the image: A three-ray tube with a dardening mak and a mosaic-pattern

Radiotechnika, II, fasc. 9, 74-79 (1956) CARD 2 / 2 PA - 1530

luminescent screen (of the Kolortron type) and a one-ray tube with a control net and a striped luminescent screen (of the Chromatron type).

A.D. ASATIAN described the characteristic of tube types such as are used in Western Europe and the USA for broadcasting- and television sets, and he gave a survey of the new Sovietic "finger-tubes" for telvision- and radio sets.

A.K. BEKTABEGOV reported on the new piézoceramic pickup which offers a number of advantages.

A.G. MURADIAN analyzed the working of amplifiers in semiconductor devices with series- and parallel back-coupling.

B.A. KRASJUK described the experimental examination of the modification of the magnetic properties of alloys of the "Permalloj" type under the influence of gamma rays.

INSTITUTION:

MURADYAN, A.G.

9(4) PHASE I BOOK EXPLOITATION SOV/1889

MSNKh. Moskovskiy ekonomicheskiy administrativnyy rayon. Sovet narodnogo khozyaystva

Poluprovodnikovyye diody i triody i ikh primeneniye; sbornik statey. (Semiconductor Diodes and Triodes and Their Uses; Collection of Articles) Moscow, Tsentr. byuro tekhn. inform., 1958. 102 p. (Series: Dostizheniya nauki i tekhniki) 1,700 copies printed.

Consulting Engineer: Ye.Z. Korobeynikova; Ed.: G.P. Gems.

PURPOSE: This book may be useful to engineers in the field of semiconductor electronics.

COVERAGE: The articles in this collection discuss problems in the design, manufacture, and application of new types of semiconductor devices. The double-base diode is described and results of the calculation of its characteristics are given. Fused-junction silicon and germanium triodes are discussed and the characteristics of the type 314 fused-junction triode are presented. The effect of feedback in transistor amplifiers on nonlinear distortions is covered. Operation of low-frequency transistor amplifiers for individual units of multichannel communication systems is explained and a discussion of transistor units of the KPP 30/60 system is presented. Attention is given to the problems of cooling transistor devices. There is a review of Soviet and Western magazines and patents for 1956-1957 concerned with semiconductor devices and their applications. There are no references.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress (TK7872.T73 P58)

MURADYAN, A. G.

SOV/106-58-9-16/17

AUTHOR: None given

TITLE: Author's Certificates (Avtorskiye svidetel'stva)

PERIODICAL: Elektrosvyaz', 1958, Nr 9, p 78 (USSR)

ABSTRACT: S.I. Kitaev, A.M. Polyukovskiy, "Method of Improving the Utilization of the Frequency Band of a Communication Channel when Sending Picture Signals"; R.A. Kudryavtsev, "Method of Amplitude Modulating Picture Signals and an Arrangement for Achieving the Method"; A.G. Muradyan, M.N. Stoyanov, A.A. Trifonov-Yakovlev, "Method of Compressing Subscribers' Lines at a Main Telephone Exchange"; E.V. Zelyakh, Ya.I. Velikin, "Electrical Blocking Filter"; D.V. Ageyev, V.V. Malanov, K.P. Polov, "Audio Frequency Power Pulse Amplifier"; L.N. Korablev, "Electronic Voltage Stabilizer"; B.M. Vul, A.P. Shotov, "Method of Preparing the Lead from the Middle Part of a Germanium Triode"; A.I. Ardab'yevskiy, L.D. Bakhrakh, L.N. Deryugin, "Method of Swinging the Beam of a Linear Aerial"; A.I. Ardab'yevskiy, L.N. Bakhrakh,

Card 1/2

Author's Certificates SOV/106-58-9-16/17

L.N. Deryugin, "Method of Electrically Swinging a Beam using a Dispersive Structure"; B.B. Lagov[illegible], "Waveguide Transformer".

Card 2/2

6(5) SOV/111-59-2-8/27

AUTHOR: Muradyan, A.G., Candidate of Technical Sciences, Chief; Shmidel', A.A., Engineer, Chief Designer,

TITLE: Individual Tone Amplifier (ITU) (Individual'nyy tonal'-nyy usilitel' (ITU))

PERIODICAL: Vestnik svyazi, 1959, Nr 2, pp 10-12 (USSR)

ABSTRACT: The article discusses the technical specifications of the amplifier as a whole, and describes its separate component parts. The ITU amplifier is designed to complement the SUTU type amplifier, already in use, and the two types are basically similar in respect to operating frequency range, amplifying capabilities, and possibilities for equalizing arrangements in operation, in corresponding types of circuits, although the ITU contains but one equalizer, which is changeable. The ITU is intended for use in a variety of operating conditions, and is therefore to be produced in several models: for 4-conductor cable circuits the ITU-1 (way stations) and ITU-4 (terminal stations); for connection

Card 1/4

Individual Tone Amplifier (ITU)

into steel and copper air circuits, the ITU-2; for use in bi-metallic circuits and with PRVPM cable with conductors 1.2 mm in diameter, the ITU-3; for organization of auxiliary communications along cable circuits, the ITU-5 and ITU-6. The ITU contains equipment for induction, and tone calling. On 4-conductor circuits the tone call equipment can be used for sending distance-dialing pulses. The author describes the system provided for correction of amplitude-frequency distortion, accomplished by four different equalizing circuits in the amplifier. The amplifier element is a three-stage transistor unit, using P1V triodes in the first two stages, with grounded emitters, which circuit gives the greatest power amplification. The final stage uses a P2 with grounded base, to decrease non-linear distortion and stabilize output resistance. The author notes that the triode types P1, P2, and P3 are soon to be replaced with a sealed triode unit. Maximum output power of the amplifier is 30 mw, with less than 3% distortion at 420 cps. The ITU consumes

240 mw of power, 15-16 times less than the tube-operated SUTU. Amplifier stabilization is discussed. The receiving unit for tone dialing and calling uses a 3-stage amplifier, a resonant system, and rectifying bridges. First and second stages of the amplifier use P1 triodes, and the third a P3B, guaranteeing sufficient power for relay operation. All 3 stages have grounded emitters. Switching to any of the three calling frequencies of 2100, 1900 or 1600 cps is provided. Relay operation band-width on any one frequency is 200 cps. The tone dial and calling circuit is designed around the P1 triode, and also provides for frequency switching. The transmission and reception of calling signals is diagrammed. There are 2 circuit diagrams and 1 block-diagram.

ASSOCIATION: Laboratoriya TsNIIS-a (TsNIIS Laboratory); OKB zavod Bashkirskogo sovnarkhoza (The OKB Plant of the Bashkir

ADZHEMOV, S.A.; MURADYAN, A.G., kand.tekhn.nauk; PUSTOVOYTENKO, O.D., starshiy inzh.; SERYAKOV, N.I.

High-frequency communication system using single quadded cables with unattended transistorized booster stations. Vest. sviazi 21 no.11:13-16 N '61. (MIRA 14:11)

1. Zamestitel' nachal'nika TSentral'nogo nauchno-issledovatel'skogo instituta svyazi Ministerstva svyazi SSSR. (for Adzhemov).
(Telecommunication)

MURADYAN, Ashot Gerigenovich; SHAMSHIN, Valentin Maksimovich; BORISOV, Aleksandr Ivanovich; MIKIRTICHAN, Grigoriy Makertitivich; RIZKIN, I.Kh., otv. red.; VOLODARSKAYA, V.Ye., red.; CHURAKOVA, V.A., tekhn. red.

[Use of transistors in long-distance telecommunication equipment] Primenenie tranzistorov v apparature dal'nei sviazi. Moskva, Sviaz'izdat, 1963. 71 p. (MIRA 16:7) (Transistors) (Telecommunication--Equipment and supplies)

ACC NR: AP6035867 SOURCE CODE: UR/0413/66/000/020/0079/0080

INVENTOR: Muradyan, A. G.; Gol'dfarb, I. S.; Petrov, G. D.

ORG: none

TITLE: Equipment for data transmission and reception using optical carrier. Class 21, No. 187155. [announced by the Central Scientific-Research Institute of Communications, Ministry of Communications SSSR (Tsentral'nyy nauchno-issledovatel'skiy institut svyazi Ministerstva svyazi SSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 79-80

TOPIC TAGS: data transmission, laser application, laser communication, laser modulation

ABSTRACT: An Author Certificate has been issued for a data transmission and reception apparatus with an optical carrier (see Fig. 1). To increase the capacity of

Card 1/2 UDC: 621.375.8 621.376.9

ACC NR: AP6035867

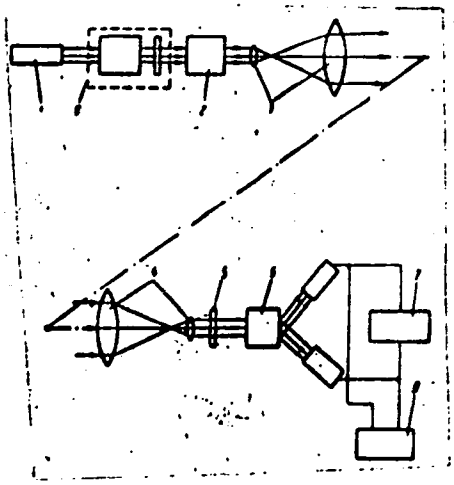

Fig. 1. Data transmission and reception apparatus

1 - Monochromatic radiation source; 2 - polarizing electro-optical modulators; 3 - transmitting system; 4 - receiving system; 5 - 1/4 plate; 6 - double refracting prism; 7 - differentiating circuit; 8 - amplitude modulator; 9 - adder.

transmited data, the amplitude modulator is placed between the light source and the polarizing modulator in the transmitter; in the receiver an adder is connected to the photoreceiver outputs in parallel with the differentiating circuit. Orig. art. has: 1 figure.

SUB CODE: 17,09,20/ SUBM DATE: 21Jul65/ ATD PRESS: 5106

Card 2/2

MURADYAN, A. O.

"The Uric Acid of the Blood During a Normal Pregnancy, During the Birth Process, in the Postnatal Period, and During Certain Toxicoses of Pregnancy." Cand Med Sci, Chair of Obstetrics and Gynecology, Kiev Inst for the Advanced Training of Physicians, Kiev, 1954. (KL, No 12, Mar 55)

SO: Sum. No. 670, 29 Sep 55--Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

AVAKYAN, S.M.; ASLANYAN, I.L.; MURADYAN, A.R.

Effect of lavage of tonsillar lacunae on blood protein fractions and leucocytes. Zhur. eksp. i klin. med. 5 no.3:65-69 '65.
(MIRA 19:1)

MURADYAN, A. V. and ARUTYUNYAN, G. K.

"Veterinary specialists of the Armenian Soviet Socialist Republic in the struggle for the cattle-breeding rise."

Veterinariya, Vol. 37, No. 1, 1960, p. 5

Muradyan - Sr. Vet. Dr.

ARUTYUNYAN, O.P.; MURADYAN, A.V., starshiy veterinarnyy vrach

Veterinary service in Armenia and the 40th anniversary of the Republic. Veterinariia 37 no.11:10-16 N '60. (MIRA 16:2)

1. Zamestitel' nachal'nika veterinarnogo upravleniya Ministerstva sel'skogo khozyaystva Armyanskoy SSR (for Arutyunyan).
(Armenia—Veterinary medicine)

MURADYAN, A. V. (Senior Veterinary Surgoen of the Administration of Veterinary Medicine of the Ministry of Agriculture of the Armenian SSR)

"Concerning the measures for prevention of mastitis in Cows."

Veterinariya, Vol. 38, No. 12, December 1961, P. 13.

MURADYAN, A.V. (Senior Veterinary Doctor, Administration of Veterinary Medicine, Ministry of Agriculture of the Armenian SSR).

"Leader of kolkhoz production..."
Veterinariya, vol. 39, no. 3, March 1962 pp. 17.

MURADYAN, A. Ye.:
Joint Academic Council, All-Union Sci Res Inst of the Mechanization of Agriculture (VIM) and All-Union Sci Res Inst of the Electrification of Agriculture (VIESKh).
Moscow, 1956

MURADYAN, A. Ye.: — "Investigation of the operation of a single-phase rectifier and of a direct-current electric motor for an electric tractor." Joint Academic Council, All-Union Sci Res Inst of the Mechanization of Agriculture (VIM) and All-Union Sci Res Inst of the Electrification of Agriculture (VIESKH). Moscow, 1956.
(Dissertation for the Degree of Candidate in Technical Sciences)

SO: Knizhnaya Letopis'. No. 20, 1956

SLAVIN, R.M., kand.tekhn.nauk; MURADYAN, A.Ye., kand.tekhn.nauk

How static characteristics of the electric drive affect the productivity of tractors. [Mauch.trudy] VIESKH 3:67-80 '58. (MIRA 13:4)

(Tractors--Electric driving)

LISTOV, P.N., prof., doktor tekhn.nauk; GANELIN, A.M.; GRICHEVSKIY, E.Ya.; LEVIN, M.S.; MURADYAN, A.Ye.; SLAVIN, R.M.; YAKOBS, A.I.; DEMINA, G.A., red.; TOKER, A.M., tekhn.red.

[Electrician for rural electric power systems] Elektromonter sel'skoi elektrifikatsii. Pod red. P.N.Listova. Moskva, Vses. uchebno-pedagog.izd-vo Proftekhizdat, 1960. (MIRA 13:5)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhoz.nauk (VASKhNIL) (for Listov).
(Electricians--Handbooks, manuals, etc.)
(Electricity in agriculture)

LEVIN, M.S., kand.tekhn.nauk; MURADYAN, A.Ye., kand.tekhn.nauk; STOLYAROV, G.K., inzh.; KHOTYASHOV, E.N., inzh.

Electric and economic calculations of rural networks with electronic calculating machines. Mekh.i elek.sots.sel'khoz. 19 no.5:45-49 '61. (MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii sel'skogo khozyaystva (for Levin, Muradyan).
(Electronic calculating machines)
(Electricity in agriculture)

BUDZKO, Igor' Aleksandrovich, doktor tekhn. nauk, prof.,akad.; ZAKHARIN, Andrey Georgiyevich, doktor tekhn. nauk; EBIN, Lev Yefimovich, doktor tekhn.nauk, prof.; KANAKIN, N.S., inzh.; LEVIN, M.S., kand. tekhn. nauk; YAKOBS, A.I., kand. tekhn. nauk; GROYS, Ye.S., inzh.; ZUL', N.M., kand. tekhn. nauk; POYARKOV, K.M., kand. tekhn. nauk; MURADYAN, A.Ye., kand. tekhn. nauk; KRAUSP, V.R., kand. tekhn. nauk; SHATS, Ye.L., kand. tekhn. nauk; IOKHVIDOV, E.S., red.; BUL'DYAYEV, N.A., tekhn. red.

[Rural electric power distribution networks] Sel'skie elektricheskie seti. Moskva, Gosenergoizdat, 1963. 262 p. (MIRA 16:5)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im. V.I.Lenina (for Budzko).
(Rural electrification) (Electric power distribution)

MURADYAN, E., sud'ya respublikanskoy kategorii

Radio amateurs of Azerbaijan. Radio no.6:8-9 Je '65.

(MIRA 18:10)

1. Predsedatel' sportivnoy komissii Federatsii radiosporta AzerSSR.

L 14493-65 EWT(m) DIAAP/AFWL/SSD/ESD(t)
ACCESSION NR: AP4048636 S/0048/64/028/010/1657/1663

AUTHOR: Vartapetyan,G.A.; Garibyan,T.A.; Demekhina,N.A.; Muradyan,E.G.; Khudaverdyan,A.G.

TITLE: Properties of the levels and radiations of the odd-A nuclei Cs^{131} and Cs^{133} /Report, Fourteenth Annual Conference on Nuclear Spectroscopy held in Tbilisi 14-22 Feb 1964/

SOURCE: AN SSSR, Izv. Seriya fizicheskaya, v.28, no.10, 1964, 1657-1663

TOPIC TAGS: nuclear physics, nuclear radiation, nuclear structure, gamma emission

ABSTRACT: Delayed γ-coincidence measurements were performed with Cs^{131} (and in one case with Cs^{133}) in order to obtain information concerning the nature of the excited states and the extent to which they involve collective motions. KI crystals were used in a delayed coincidence circuit with a resolving time of 10^{-8} sec. The performance of the circuit was checked by observing prompt coincidences from Co^{60}. With the aid of the known different lifetimes of the 124 and 133 keV Cs^{131} levels, it was determined from the delayed coincidence measurement results that the 1039 keV level decays almost 15 times more frequently to the 124 keV level than to the

1/3

133 keV level. This contradicts conclusions drawn from the model of L.W.Person and I.O.Rasmussen (Nucl.Phys.36,166,1962). The half-life of the 620 keV Cs^{131} state was measured by triple KX30-γ495-γ124 coincidences, and that of the 438 keV Cs^{133} state was measured by a similar method. Both half-lives were found to be less than 1.5×10^{-10} sec. The half-life of the 1039 keV Cs^{131} state was found by delayed KX30-γ1039 coincidences to be less than 2×10^{-9} sec. The half-life of the 133 keV Cs^{131} state was found to be 13.5×10^{-9} sec; this is in agreement with the finding of E.Bodenstedt et al (Nucl.Phys.20,557,1960). The angular correlation of the 495 and 124 keV γ-rays of Cs^{131} was examined and an anisotropy of the order of 0.01 was found. It is concluded that the decay of the 124 keV level is 97% by M1 transition and 3% by E2. The ratio of the reduced E2 width to the theoretical value for a single-particle state was found to be greater than 4.5 for the 356 keV Cs^{133} state, greater than unity for the 495 keV Cs^{131} state, and approximately 6 for the 133 keV Cs^{131} state. These estimates are in satisfactory agreement with calculations of R. Sorensen (Phys.Rev.133,B281,1964) in which nucleon pairing and collective vibrations were taken into account. The significance of these findings for models of odd-A nuclei is discussed. "In conclusion the authors express their gratitude to A.I.Alikhanyan for his interest in the work." Orig.art.has: 2 formulas, 4 figures and 3 tables.

L 14[illegible]-65
ACCESSION NR: AP4048636

ASSOCIATION: Fizicheskiy institut Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR (Physics Institute, State Committee on the Uses of Atomic Energy, SSSR)

SUBMITTED: 00 ENCL: 00

SUB CODE: NP NR REF SOV: 005 OTHER: 020

3/3

MURADYAN, E.K., inzh.

Use of the KPP-09 potentiometer as a program regulator in wood drying. Der.prom. 11 no.11:20-21 N '62. (MIRA 15:12)
(Lumber—Drying) (Potentiometer)

MURADYAN, G.G.

Evenness of seeding, dimensions of the seed hill and hill displacement in spot seeding cotton. Izv.AN Arm.SSR.Biol. i sel'khoz.nauki 9 no.11:121-127 N '56. (MLRA 10:1)

1. Institut zemledeliya Ministerstva sel'skogo khozyaystva Armyanskoy SSR.

(Cotton) (Sowing)

MURADYAN, G.G., inzhener.

Electric apparatus for recording continuity of seed delivery. Sel'khozmashina no.2:11-12 F '57. (MLRA 10:4)
(Drill (Agricultural implement))

MIRZOYAN, G.I.; MERSESYAN, A.S.; ANTONYAN, A.A.; TROSYAN, S.A.; MURADYAN, G.T.

Disorders of the nervous system in trichinosis. Zhur.nevr. i psikh. Supplement:18-19 '57. (MIRA 11:1)

1. Klinika nervnykh bolezney (zav. - prof. G.I.Mirzoyan) II Meditsinskogo ob"yedineniya, Yerevan.
(NERVOUS SYSTEM--DISEASES)
(TRICHINA AND TRICHINOSIS)

MURADYAN, G.T.

Clinical forms of affections of the nervous system due to the chronic effect of 2-chlorbutandiene [with summary in French]. Zhur.nevr. i psikh. 58 no.10:1238-1240 '58 (MIRA 11:11)

1. Klinika i kafedra nervnykh bolezney (zav. A.A. Akopyan) Yerevanskogo meditsinskogo instituta.

(BUTANDIENE, inj. eff.
2-chlorbutandiene, NS lesions (Rus))
(NERVOUS SYSTEM, dis.
2-chlorbutandiene-induced lesions (Rus))

KYANDARYAN, K.A., starshiy nauchnyy sotrudnik; MOVSESYAN, M.A., starshiy nauchnyy sotrudnik; MURADYAN, G.T., kand.biologicheskikh nauk; ARUTYUNYAN, R.K., mladshiy nauchnyy sotrudnik; MAZMANYAN, S.A., mladshiy nauchnyy sotrudnik

Diagnosis of chronic radiation sickness. Vop. radiobiol. [AN Arm. SSR] 1:37-40 '60. (MIRA 15:3)

L. Iz Sektora radiobiologii AN Armyanskoy SSR, Instituta rentgenologii i onkologii i Kliniki nervnykh bolezney.
(RADIATION SICKNESS)

MURADYAN, G.T., kand.meditsinskikh nauk

Arsenic polyneuritis in poisoning with fly agaric. Sov. med. 24 no. 7:132-133 Jl '60. (MIRA 13:8)

1. Iz kafedry nervnykh bolezney (zav. - prof. A.A. Akopyan) Yerevanskogo meditsinskogo instituta.
(NEURITIS, MULTIPLE) (ARSENIC POISONING)
(MUSHROOMS, POISONOUS)

MURADYAN, G.T.

Clinical aspects of the nervous system lesion in grancsan poisoning. Zhur. nevr. i psikh. 62 no.5:706-708 '62.
(MIRA 15:6)

1. Kafedra nevnykh zabolevaniy (zav. - prof. A.A. Akopyan [deceased]) Yerevanskogo meditsinskogo instituta.
(MERCURY COMPOUNDS--TOXICOLOGY)
(NERVOUS SYSTEM--DISEASES)

VARTAPETYAN, P.A.; MURADYAN, G.T.; TOROSYAN, S.A.

Precordial pains of extracardial origin. Sov. med. 28 no.7:104-106 Jl '64. (MIRA 18:8)

1. Klinika fakul'tetskoy terapii (zav. - prof. T.S.Mnatsakanov), klinika nevrologii i neyrokhirurgii (zav. - prof. S.G.Zograbyan) i klinika nervnykh bolezney (zav. - prof. G.I.Morzoyan) Yerevanskogo meditsinskogo instituta.

MURADYAN, G. V.

①

S/056/63/044/004/013/044
B102/B186

AUTHORS: Pevzner, M. I., Adamchuk, Yu. V., Danelyan, L. S., Yefimov, B. V., Moskalev, S. S., Muradyan, G. V.

TITLE: Neutron-spectroscopic investigations of Nuclear Levels. 1. Neutron cross sections of molybdenum isotopes in the 7 - 15,000 ev energy range

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 4, 1963, 1187 - 1194

TEXT: The time-of-flight method was used for determining the total neutron cross sections (path length 109.14 m) and the radiative capture cross sections (path length 15.1 m) for Mo isotopes from A = 92 to 100. The measurements were made by means of a neutron spectrometer (cf. Atomnaya energiya, 13, 327, 1962), and a linear electron accelerator was used as pulsed neutron source (OIYaI Report P-956, Dubna, 1962); the pulse duration was 0.6 μsec, the repetition frequency 100 cps, the channel width of the time analyzer 0.577 μsec. The neutrons were detected by a stack of 230 proportional counters arranged in an aluminum tank filled with BF_3 (80% B^{10}). The

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Neutron-spectroscopic investigations...

detector area was 2500 cm^2; the thickness in the direction of the neutron trajectories was 17.6 cm. The highest resolution in the total cross-section measurements was 0.006 μsec/m. The energy distribution of the total neutron cross section is graphically shown for the whole range investigated and the numerical results are tabulated for the great many resonance levels observed with the seven Mo isotopes investigated; E_o, Γ_γ, Γ_n, and Γ_n^o are given. In the calculations, the interference between potential and resonance scatterings is taken into account. Also the strength function for the s-wave, $S_o = \overline{\Gamma_n^o}/D$, is calculated for all isotopes. The weak levels detected (Mo^{95} - 110.8, 118.3, 220, 249, 267.3 ev; Mo^{97} - 230 ev; Mo^{98} 12 ev and Mo^{100} 99.5 ev) are attributed to p-neutron capture. A series of double and even triple peak coincidences were observed; thus, for example, at 335±10 ev Mo^{92}, Mo^{95} and Mo^{100} have a peak; at 1520±10 ev, Mo^{94}, Mo^{97} and Mo^{98}. There are 2 figures and 2 tables.

SUBMITTED: November 26, 1962

Card 2/2

ACC NR: AP7001937 SOURCE CODE: UR/0120/66/000/006/0043/0050

AUTHOR: Muradyan, G. V.; Adamchuk, Yu. V.; Moskalev, S. S.

ORG: Institute of Atomic Energy, GKAE, Moscow (Institut atomnoy energii GKAE)

TITLE: Neutron spectrometer for identifying nuclear levels from the orbital moment of incoming neutrons

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1966, 43-50

TOPIC TAGS: ~~spectrometer~~, radiation spectrometer, neutron spectrometry, neutron beam, scintillation detector

ABSTRACT: A neutron spectrometer intended for identifying nuclear levels from the orbital moment of incoming neutrons is described. The method of identifying s and p neutron levels is based on interference observations by means of a Doppler shift produced by the motion of the sample being studied. Neutrons from a pulsed source are passed through a moving filter T and are then recorded from captured γ-rays generated by a sample D which consists of T and the investigated nuclei. Pulses from γ-quanta are passed on to a time delay analyzer by means of which the neutron time distribution is obtained. It is shown that the measurement results depend on the direction of motion of the sample T for the s levels only. A schematic drawing of the orbital moment selector

Card 1/5 UDC: 539.122.164.08

ACC NR: AP7001937

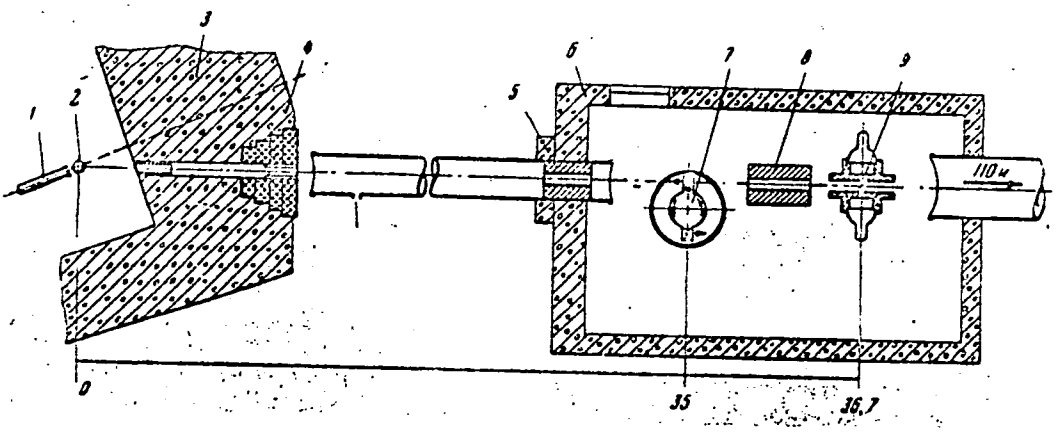

Fig. 1. Layout of the spectrometer system in the path of a neutron beam

1 - Accelerator; 2 - target (uranium + H_2O moderator); 3 - accelerator protective wall; 4 - gate; 5, 8 - collimators; 6 - concrete shield; 7 - orbital moment selector; 9 - scintillation detector.

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is shown in Fig. 1. A pulsed linear electron accelerator is used to produce a neutron pulse. The electron pulse has the following characteristics: width, 0.25 msec; current, ~0.5 amp; and energy, ~25 Mev.

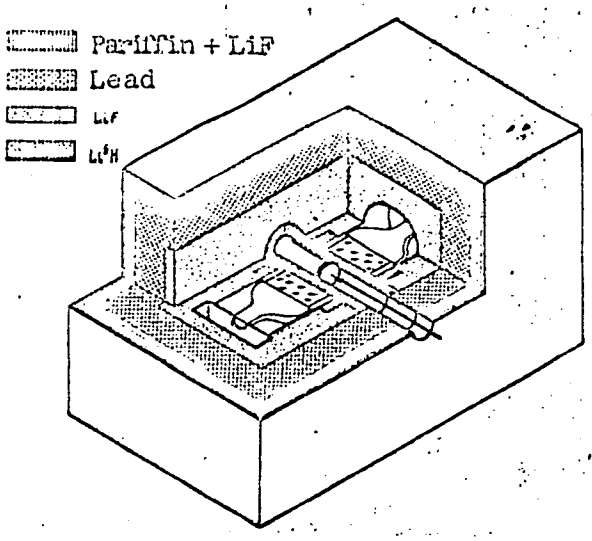

Fig. 2. Cut-away drawing of the two-crystal scintillation detector

ACC NR: AP7001937

Upon impinging on the uranium target, the electrons are converted into γ-rays which in turn generate fast neutrons. Neutron moderation is achieved by a 4-cm-thick water moderator surrounding the uranium target. Initial shaping of the neutron beam is made by an opening in the gate and by collimators located in a vacuum neutron guide. The neutron guide ends in a separate section in which are contained the sample holder (7), collimators (8) performing the final neutron beam shaping, and an NaI(Tl) scintillation detector (9) for recording the process of neutron capture. A cut-away drawing and a block diagram of the scintillation detector are shown in Fig. 2 and Fig. 3, respectively. The two NaI(Tl) crystals are mounted on two FEU-49 photomultipliers. To reduce the neutron noise, the sample is surrounded by a 3-cm-thick cylindrical layer of pressed LiH. A 10-cm-thick lead shield is placed around the detector. The external shield is of LiF and paraffin. The detector was initially used in experiments to measure the radiation capture of individual Ag^{107} and Ag^{109} isotopes using a 2.048-channel time analyzer (channel width, 0.25 μsec). The width of the neutron pulse was ~0.2 μsec. The operation of the entire spectrometer system was tested in s and p identifications of Nb^{93} levels in the region of 400—500 ev.

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ACC NR: AP7001937

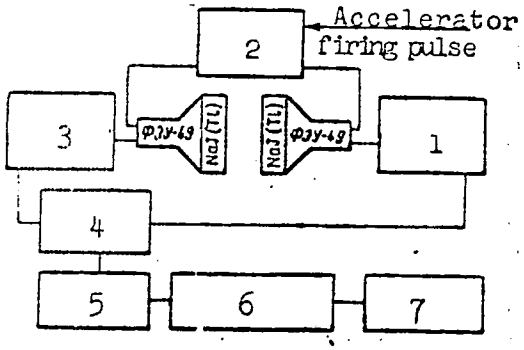

Fig. 3. Block-diagram of the detector

1 - Cathode repeater; 2 - quenching pulse generator; 3 - cathode repeater; 4 - integrating circuit; 5 - amplifier; 6 - integral discriminator; 7 - time analyzer

It was found that at E_o = 460.3 ev the level was of the s type, and at E_o = 500.3 ev of the p type. Orig. art. has: 8 figures. [WA 75] [JR]

SUB CODE: 20/ SUBM DATE: 08Apr66/ ORIG REF: 001/
OTH REF: 005

Card 5/5

AMIYAN, V.A.; MUSINOV, V.I.; UGOLEV, V.S.; MURADYAN, I.M.

Drilling in producing strata. Neft. khoz. 42 no.6:35-41 Je '64. (MIRA 17:8)

AMIYAN, V.A.; VASIL'YEVA, N.P.; MUSINOV, V.I.; MURADYAN, I.M.; UGOLEV, V.S.

Physical and physicochemical fundamentals of sand-plug flushing in oil wells using foam. Neft. khoz. 43 no.3: 63-66 Mr '65. (MIRA 18:6)

BABUNTS, S.A.; KURADYAN, K.M.

Electromyographic studies on the motor activity of the ureter in experimental renal colic before and after paranephral novocaine block. Zhur. eksp. i klin. med. 5 no.2:3-14 '65.

(MIRA 19:1)

MURADYAN, K.M.

Comparative evaluation of the effectiveness of the use of A.V. Vishnevskii's lumbar novocaine block and M.IU. Lorin-Epshtein's block in renal colic. Zhur. eksp. i klin. med. 5 no.3:83-89 '65. (MIRA 19:1)

SARUKHANYAN, V.O.; DZHANDZHUGAZYAN, A.G.; MURADYAN, K.M.; VARTANYAN, A.

Potentiated anesthesia. Trudy Erev.med.inst. no.11:341-346 '60.
(MIRA 15:11)

1. Iz kafedry khirurgicheskogo sanitarno-gigiyenicheskogo fakul'teta (zav. kafedroy - prof. V.O.Sarukhanyan) Yerevanskogo meditsinskogo instituta.

(ANESTHESIA)

MURADYAN, K.M.

Age of the pyrite mineralizati[illegible] the Tandzut deposit. Dokl. AN Arm. SSR 40 no.4:237-242 65. (MIRA 18:6)

1. Submitted October 8, 1964.

MURADYAN, K.M.

Iozite from the acid subvolcanic complex in the Bazumskiy ore region in northern Armenia. Dokl. AN Arm. SSR 40 no.5:301-305 '65. (MIRA 18:7)

1. Institut geologicheskikh nauk AN ArmSSR. Submitted October 8, 1964.

BABAYAN, V.O.; MURADYAN, L.A.

Some data on the setting of seeds in potatoes under different conditions. Izv.AN Arm. SSR. Biol. nauki 14 no.9:97-100 S '61.
(MIRA 14:9)

1. Institut zemledeliya Ministerstva sel'skogo khozyaystva Armyanskoy SSR.

(ARMENIA--POTATO BREEDING)

MURADYAN, M.O.

USSR/ Miscellaneous - Anniversaries

Card 1/1 Pub. 124 - 38/45

Authors : Muradyan, M. O.

Title : The 125th anniversary of the birth of M. Nalbandyan

Periodical : Vest. AN SSSR 2, 103-105, Feb 1955

Abstract : Notes are presented of the special meeting held at the Academy of Sciences Arm. SSR honoring the 125th birthday of the Armenian writer and social worker, Mikael Lazarevich Nalbandyan.

Institution : .....

Submitted : .....

Muradyan, R. M.

20-5-10/54

AUTHOR: Muradyan, R. M.

TITLE: Asymptotic Formulae for the Generalized Legendre Functions (Asimptoticheskiye formuly dlya obobshchennykh funktsiy Lezhandra i funktsiy Gegenbauera).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 5, pp. 887-890 (USSR).

ABSTRACT: The asymptotic expressions for the generalized Legendre functions

$P_1^m(\cos\varphi)$, $Q_1^m(\cos\varphi)$, $P_1^m(\operatorname{ch}\varphi)$ and $Q_1^m(\operatorname{ch}\varphi)$

at large values of 1 and fixed m can be determined by means of a method by D. Ivanenko and A. Sokolov (Klassicheskaya teoriya polya, Moskau-Leningrad, 1951, p. 273). The character of this method consists in the fact that the solution of the generalized Legendre differential equation is set up in form of a product of two arbitrary functions. In the equation thus obtained the author neglects quantity which at increasing 1 rapidly tends towards zero. This makes an accurate determination

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Asymptotic Formulae for the Generalized Legendre Functions

of the arbitrary functions possible. The functions $P_1^m(\cos\varphi)$ and $Q_1^m(\cos\varphi)$ satisfy the differential equation $u'' + \operatorname{ctg}\varphi\, u' + \{l(l+1) - (m^2/\sin^2\varphi)\}\, u = 0$. The solution of this equation is set up here in the form $u = f(\varphi)\,\Psi(\varphi)$. The value of ε resulting from this ansatz at $l \gg m$ tends rapidly towards zero. By the neglect of ε, Bessel's equation (Besselya)

$$f'' + \frac{f'}{\varphi} + \left[(l + (1/2)^2 - m^2/\varphi^2\right] f = 0$$

is obtained for the determination of the function f, the solution of which is set up here in the form

$$f(\varphi) = AJ_{-m}((l + (1/2)\varphi) + BN_{-m}((l + (1/2)\varphi).$$

After determination of A and B the required asymptotic formulae are obtained. The formulae for $P_l^m(\operatorname{ch}\varphi)$ and $Q_l^m(\operatorname{ch}\varphi)$ are obtained in an analogous

Asymptotic Formulae for the Generalized Legendre Functions

manner. There formulae are specialized here also for the cases m = 0 and m = $\pm$ 1/2. Asymptotic formulae are given for the so-called cosine formulae. Also for Gegenbauer's function $C_1^{\nu}(\cos\varphi)$ an asymptotic expression is derived and simplified. Various formulae given here denote a special case of an asymptotic formula for the hypergeometrical function at high values of the parameter λ. There are 6 references, 5 of which are Slavic.

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

PRESENTED: By N. N. Bogolyubov, Academician, March 18, 1957

SUBMITTED: March 12, 1957

AVAILABLE: Library of Congress

32502
S/044/61/000/011/025/049
C111/C444

14.4100

AUTHORS: Arutyunyan, V. M; Muradyan, R. M.

TITLE: Asymptotic formulas for the Jacobi functions of first and second kind

PERIODICAL: Referativnyy zhurnal, Matematika, no. 11, 1961, 57, abstract 11B296. (Nauchn. dokl. vyssh. shkoly Fiz.-matem. n. 1958, no. 3, 8 - 13)

TEXT: For high values of l and $0 \leq x < \pi$, one derives asymptotic formulas for the Jacobi functions of first kind $P_l^{(\alpha,\beta)}$ and of second kind $Q_l^{(\alpha,\beta)}$;

e. g.

$$P_l^{(\alpha,\beta)}(\cos x) = \frac{\Gamma(l+\alpha+1)}{\Gamma(l+1)\,[l+(\alpha+\beta+1)/2]^{\alpha}} \left(\frac{x}{\sin x}\right)^{1/2} \times$$

$$\times \frac{1}{[\sin(x/2)]^{\alpha}\,[\cos(x/2)]^{\beta}}\, J_{\alpha}\left(\left(l+\frac{\alpha+\beta+1}{2}\right)x\right).$$

$$Q_l^{(\alpha,\beta)}(\cos x) = -\frac{\pi}{2}\,\frac{\cos\alpha\pi\,\Gamma(l+\beta+1)\,[l+(\alpha+\beta+1)/2]^{\alpha}}{\Gamma(l+\alpha+\beta+1)} \times$$

$$\times \left(\frac{x}{\sin x}\right)^{1/2} \frac{1}{[\sin(x/2)]^{\alpha}\,[\cos(x/2)]^{\beta}} \times$$

$$\times N_{\alpha}\left(\left(l+\frac{\alpha+\beta+1}{2}\right)x\right).$$

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32502
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C111/C444

Asymptotic formulas for the Jacobi....

J_α, $N_\alpha(x)$ being the Bessel functions of first respectively second kind. Analogous formulas are obtained for $P_1^{(\alpha,\beta)}(chx)$ and $Q_1^{(\alpha,\beta)}(chx)$.

[Abstracter's note: Complete translation.]

Card 2/2

SOV/20-122-5-1/56

AUTHORS: Arutyunyan, V.M., Muradyan, R.M., and Sokolov, A.A.

TITLE: Asymptotic Expression for the Degenerated Hypergeometric Function (Asimptoticheskoye vyrazheniye dlya vyrozhdennoy gipergeometricheskoy funktsii)

PERIODICAL: Doklady Akademii nauk, SSSR, 1958, Vol. 122, Nr 5, pp 751-754 (USSR)

ABSTRACT: The author studies the asymptotic behavior of the solutions of a differential equation of the form

$$u'' + f(x)u = 0 \qquad (1)$$

by constructing a "neighboring equation." The solution of equation (1) is sought in the form

$$u = \varphi(x)\, F[z(x)] \qquad (2)$$

where φ, F and z are arbitrary functions. Substituting (2) in (1), the asymptotic expression

$$u = (z/z')^{\frac{1}{2}} \left\{ AZ_s^{(1)} \quad BZ_s^{(2)} \right\} (z) \left\{ \qquad (4)$$

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Asymptotic Expression for the Degenerated Hypergeometric Function

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is obtained, where $Z_s^{(1)}$ and $Z_s^{(2)}$ are two linearly independent solutions of the Bessel equation and A and B are constants. The results are applied by the author to the location of asymptotic formulas for Whittaker's degenerate hypergeometric function $W_{\eta,\mu}(x)$ and to such special cases of this function as Hermitian and Laguerre polynomials and the Bessel function, and also to the derivation of Eilb's asymptotic formula. There are 7 references, 4 of which are Soviet, 2 American, and 1 German.

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

PRESENTED: June 2, 1958, by N.N. Bogolyubov, Academician

SUBMITTED: May 23, 1958

Card 2/2

S/055/59/000/04/006/026
B014/B005

AUTHORS: Sokolov, A. A., Muradyan, R. M., Arutyunyan, V. M.

TITLE: Development of the WKB Method of Approximation

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1959, Nr 4, pp 61 - 78 (USSR)

ABSTRACT: In mathematical physics, special functions which are exact solutions of differential equations are often approximated by simpler functions. The authors mention the method by Liouville-Steklov (Ref 1) for differential equations of second order, and then explain the method of approximation suggested by Wentzel, Kramers and Brillouin (Ref 3) (WKB method) for the solution of the wave equation. In this method, already the first approximation gives good results. In the present paper, this method is put forward in a generalized form. Besides, better approximated solutions are derived for a number of cases by finding the solution of a differential equation "neighboring" the original differential equation. In the first principal part of the present paper, the solutions (2,11) and (2,12) are obtained by the WKB method starting from the linear differential equation of second order $u'' + f(x)u = 0$ (2,2). The first solution

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Development of the WKB Method of Approximation

S/055/59/000/04/006/026
B014/B005

holds for $f(x)>0$, the second one for $f(x)<0$. The authors point out that many problems of quantum mechanics can be solved by the method put forward here. This method gives no result near the point $x = x_0$ where $f(x_0) = 0$. Here, the required function is not approximated by harmonic functions as in the first case nor by exponential functions as in the second case, but by Bessel functions. In the second principal part, asymptotic formulas for regular hypergeometric functions are derived. The spherical functions are dealt with first. The authors proceed from the Legendre functions (3,1) and (3,2), and write down the four solutions (3,3) and (3,4). From the latter, the known asymptotic formulas for the Legendre functions (3,20) and (3,21) are derived by the above-mentioned method. The application of these functions is shown by a treatment of the elastic scattering of particles in a Yukawa potential. Further, the approximate formulas for the Jacobi functions of first and second type, and for the Gegenbauer functions are derived. There are 1 figure and 16 references, 10 of which are Soviet.

ASSOCIATION: Kafedra statisticheskoy fiziki i mekhaniki (Chair of Statistical Physics and Mechanics)

Card 2/3

Development of the WKB Method of Approximation

S/055/59/000/04/006/026
B014/B005

SUBMITTED: April 9, 1959

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S/055/59/000/06/07/027
B006/B005

AUTHORS: Sokolov, A. A., Muradyan, R. M., Arutyunyan, V. M.

TITLE: Development of an Approximate WKB Method

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1959, No. 6, pp. 64 - 86

TEXT: The present paper continues the first part published in "Vestnik Moskovskogo universiteta", 1959, No. 4, p. 61. It begins with § 4 dealing with the confluent hypergeometric function and deals at first with the Whittaker function. The formulas derived are subsequently applied to a concrete case: the investigation of the emission of an electron moving at ultrarelativistic velocity in a constant, homogeneous magnetic field. The problem is schematically shown by Fig. 1; Fig. 2 shows the dependence of radiation intensity on the number of harmonics. The subsequent chapters deal with the Laguerre and Hermite polynomials, the quantum correction in the theory of "radiating" electrons, and the determination of eigenvalues (the approximate method developed here does not only permit a derivation of asymptotic expressions for wave functions but also a determination of eigenvalues of the parameter λ - cf. Part I). The paper

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concludes with a comparison of the asymptotic formulas with the accurate formulas within the range of relatively small quantum numbers. (Abstracter's Note: Without knowing the first part of the paper it is not possible to follow the course of calculation, all the more so as all definitions necessary are missing.) There are 5 figures and 11 references, 9 of which are Soviet.

ASSOCIATION: Kafedra statisticheskoy fiziki i mekhaniki (Chair of Statistical Physics and Mechanics)

SUBMITTED: April 9, 1959

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24(5)

AUTHORS: Sokolov, A. A., Arutyunyan, V. M., Muradyan, R. M. SOV/56-36-2-37/63

TITLE: The Calculation of the Phases of Scattering Taking into Account the Second Approximation (Vychisleniye faz rasseyaniya s uchetom vtorogo priblizheniya)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 2, pp 594 - 599 (USSR)

ABSTRACT: In the present paper the authors calculate the phase shifts of the elastic scattering of Dirac (Dirak) particles in second approximation with respect to the interaction potential. An expression is given for the general solution of the free Dirac equation of this problem. This solution is not limited by a condition of finiteness in the origin of coordinates. This solution of the free equation is also an asymptotic expression for the Dirac equation if there exists a spherically symmetric short-range force center. The next part of the paper gives an approximate solution of the Dirac equation for the case of a central field. An integral equation equivalent to the Dirac equation is given for the case in

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which there is no vector potential and the scalar potential is spherically symmetric. The interaction energy is considered as a perturbation and the calculations are carried out in second approximation; the wave function corresponding to this approximation is given explicitly. The calculations are discussed step by step and the expressions found for the phase shifts are given explicitly. Neglecting the terms which are square with respect to V(r), one obtains the same results as in the theory of damping for the scattering of Dirac particles. For small values of the scattering phases, the results of the first Born approximation are obtained. The results of this paper may be used also for the investigation of the scattering by a Coulomb (Kulon) center, ($V(r)=-Ze^2/r$). The integral values of the phase shifts diverge in this case, but correct results are nevertheless found. Finally, expressions are given for the scattering amplitudes (in second approximation) and for the differential cross section. There are 4 references, 2 of which are Soviet.

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The Calculation of the Phases of Scattering Taking into Account the Second Approximation

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: August 26, 1958

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24(5)

AUTHORS: Arutyunyan, V. M., Muradyan, R. M.

SOV/56-36-5-38/76

TITLE: The Scattering of Dirac Particles in the Second Born Approximation (Rasseyaniye dirakovskikh chastits vo vtorom bornovskom priblizhenii)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 5, pp 1542-1545 (USSR)

ABSTRACT: The present paper is a continuation of an earlier paper by the same authors (Ref 1), which they wrote in collaboration with A. A. Sokolov; in the latter the scattering phases $\delta_l^{(1)}$ and $\delta_l^{(2)}$ of Dirac particles on arbitrary centers of force have been calculated in second approximation with respect to interaction. In the present paper the authors carry out a short investigation of the elastic scattering of Dirac particles by the spherically-symmetric field of a fixed center. On the supposition that the phase shifts are small, i.e. that $\mathrm{tg}\,\delta_l \approx \delta_l$, formulas are first given for the scattering amplitudes $f(\vartheta)$ and $g(\vartheta)$ in linear approximation, which are then further transformed by using the results obtained in reference 1. In the following, the case of high energies, when it is possible, in the Dirac equation,

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to neglect the rest mass of the particles in comparison to their total energy, is investigated. It may be shown that, if the rest mass is neglected, the phase shifts, in accordance with the given total angular momentum, coincide exactly, i.e. $\delta_l^{(1)} = \delta_{l+1}$.

The authors thank Professor A. A. Sokolov for supervising the work carried out. There are 2 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: December 2, 1958

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25.4500

AUTHOR: Muradyan, R. M.

69990
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TITLE: Azimuthal Asymmetry in the Scattering of Dirac Particles

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 5, pp 1057-1059 (USSR)

TEXT: Proceeding from the values of the phases in first approximation, the factor $D(\vartheta)$ is calculated for a certain spherically symmetric potential in this paper. According to Mott and Massey (Ref 1), the exact formula for the angular distribution of a partly polarized beam of Dirac particles contains a factor of the form $D(\vartheta) = i\left[f(\vartheta)g^*(\vartheta) - f^*(\vartheta)g(\vartheta)\right]$. By means of the theory of damping by A. A. Sokolov it was possible to generalize the results obtained by Mott to scattering by a center of force (which has not only an electric charge but also a magnetic moment), and to investigate also the case of a random potential. In first Born approximation, $f(\vartheta)$ and $g(\vartheta)$ are known to be real, and $D(\vartheta) = 0$ holds, which means that scattering has no azimuthal asymmetry. In order to determine the complex scattering amplitudes, it is necessary to take also the quadratic terms into account in the exact formulas when developing the exponents:

$$f(\vartheta) = \frac{1}{k}\sum_{l=0}^{\infty}\left[(l+1)\left(\tan\delta_l^{(1)} + i\tan^2\delta_l^{(1)}\right) + l\left(\tan\delta_l^{(2)} + i\tan^2\delta_l^{(2)}\right)\right]P_l(\cos\vartheta) ,$$

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$$g(\vartheta) = \frac{1}{k}\sum_{l=1}^{\infty}\left[\left(\tan\delta_l^{(1)} + i\tan^2\delta_l^{(1)}\right) - \left(\tan\delta_l^{(2)} + i\tan^2\delta_l^{(2)}\right)\right]P_l^1(\cos\vartheta) \quad .$$

The value of the phases need, however, not be taken into account in second approximation, and consideration of the first approximation will be sufficient. The values of the phases are explicitly written down in first approximation. By summation over l one finds $f(\vartheta) = f_{Re}(\vartheta) + if_{Im}(\vartheta)$, $g(\vartheta) = g_{Re}(\vartheta) + ig_{Im}(\vartheta)$, where the real parts $f_{Re}(\vartheta)$ and $g_{Re}(\vartheta)$ agree with the scattering amplitudes in first Born approximation. These real parts and also the imaginary parts are explicitly written down. In the case of an arbitrary spherically symmetric scatterer, $D(\vartheta) = 2\left[f_{Re}(\vartheta)g_{Im}(\vartheta) - f_{Im}(\vartheta)g_{Re}(\vartheta)\right]$ holds. In order to determine $D(\vartheta)$ in the second highest approximation, it is necessary to know the phases in second approximation. The difficulties arising in summation are, however, not yet overcome. The results obtained by the present paper may also be applied to the Coulomb field, but first a screened Coulomb field must be investigated (potential of the Yukawa type): $V(r) = -\frac{Ze^2}{r}e^{-\varkappa_0 r}$, $\bar{V}(t) = -Ze^2\delta(t - \varkappa_0)$.

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In the expression for the Yukawa amplitudes, the passage to the limit may then be made to the pure Coulomb field: $V(r) = -\frac{Ze^2}{r}$, $\bar{V}(t) = -Ze^2\delta(t)$. By the passage to the limit $\varkappa_0 \to 0$ it is easy to obtain the well-known Mott formula. In conclusion, several sums are calculated. The author thanks A. A. Sokolov for his interest in the present paper. There are 6 references, 5 of which are Soviet.

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

PRESENTED: December 25, 1959, by N. N. Bogolyubov, Academician

SUBMITTED: December 24, 1959

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