BARKA, Tibor,; TORO, Imre,; POSALAKY, Zoltan,; RAPPAY, Gyorgy.

An attempt to grow Ehrlich's ascites tumour in vitro. Acta morph. hung. 6 no.1:87-98 1955

1. Institute of experimental medicine of the Hungarian Academy of Sciences, Dept. of Morphology (Head: Prof. I. Toro) IX. Tuzolto u 58. Hungary.
(NEOPLASMS, experimental,
Ehrlich ascites carcinoma, culture in vitro)

Barka, Tibor

The replacement of the acid hydrolysis of the Feulgen reaction by bromination. Tibor Barka (Hung. Acad. Sci., Budapest). *J. Histochem. and Cytochem.* 4, 208–11(1956). —Bromination can replace acid hydrolysis in the Feulgen reaction (*C.A.* 19, 2726) (I) to liberate radicals from the purine bases present in the nuclear deoxyribonucleic acid which will histochemically color with Schiff's reagent or react with aldehyde-blocking reagents. The exact nature of I is again questioned in the light of this reaction. I. F. L.

Kiserletes orvostud. Vol. 8 No 3 (265-268)
may 1956:
MTA Kiserlet Orvosi Kutato
Intez. Morfol. Osztalya Budap.

HUNGARY/General Problems of Pathology - Tumors. Immunity. U.

Abs Jour : Ref Zhur - Biol., No 2, 1959, 8795

Author : Rappay Gy., Barka, T., Türk, I.

Inst : Hungarian Academy of Sciences

Title : The Mitosis-Intensifying Effect of Tumor-Cell Homogenate

Orig Pub : Acta morphol. Acad sci. hung., 1957, 7, No 4, 355-359

Abstract : Mice were injected with 0.3 cubic centimeters of ascitic fluid with 15-17 million Ehrlich ascites carcinoma cells. Cell homogenates of this carcinoma, of an amytal-treated [letter omitted in the Russian work; possibly something else intended] ascites sarcoma and of the liver of adult mice and rats were centrifuged for 15 minutes at 3500 revolutions per minute, and 0.5 cc of the supernatant fluid was injected into mice 9 days after the tumor transplantation. The mitotic index was determined using

Card 1/2

HUNGARY/General Problems of Pathology - Tumors. Immunity. U.

Abs Jour : Ref Zhur - Biol., No 2, 1959, 8795

2000 ascitic cells before and four, eight and 24 hours after the injection of the supernatant fluid. A statistically reliable increase in the mitotic index (199.5 and 238.5% of the original value) was obtained only eight and 24 hours after the injection of the homogenate of the same Ehrlich ascites carcinoma with a simultaneous shortening of the survival of the mice from 15.2-1.3 days in the control to 12.1-1.7 days in the experimental animals. The supernatant fluid of the other homogenates did not exert any noticeable effect on the mitotic index of the Ehrlich ascites carcinoma. -- A.M. Lunts

Card 2/2

POSALAKY, Zoltan; RADITZ, Magdolna; TORO, Imre; BARKA, Tibor

Nucleic acid metabolism in livers transplanted on chorioallantoic membrane. Kiserletes orvostud 9 no.5-6:589-595 Oct-Dec 58.

1. Budapesti Orvostudomanyi Egyetem Szovet-Fejlodestani Intezete.
(LIVER, metab.
nucleic acids in livers cultivated on chorioallantoic membranes (Hun))
(NUCLEIC ACIDS, metab.
liver, metab. in livers cultivated on chorioallantoic membranes (Hun))

BARKACEVA, Natalija

Livestock breeding specialist, "Agro Biro" (Farm Planning Bureau) Yugo

Bulevar Hugoslovenska Armije 10, Skoplie, Yugo

SILKIN, Aleksandr Nikitich; BARKACH, Z.M., red.; FILIMONOV, I.M., red.; FAYNSHMIDT, F.Ya., tekhn. red.

[Maintenance and repair of a motorcycle]Tekhnicheskoe obsluzhivanie i remont mototsikla. Moskva, Izd-vo DOSAAF, 1961. 132 p. (MIRA 15:9)
(Motorcycles--Maintenance and repair)

S/123/60/000/017/004/016
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1960, No. 17, pp. 103 - 104 # 92277

AUTHORS: Shirokov, V.A., Barkagan, M.S.

TITLE: Series of Thread-Grinding Machines of the [illegible]

PERIODICAL: Vestn. tekhn. inform. Eksperim. n.-i. in-t metallorezh. stankov, 1959, No. 3, pp. 1 - 22

TEXT: The fundamental characteristics are presented for the series of thread-grinding machines; they were proposed by the plant for articles of [illegible] 500 mm in diameter and 250-3,000 mm length. The machines of the types 5822, 5821, and 5823 are basic ones. The units and parts of the basic types were designed taking into account the possibility of maximum utilization in other machines of the series. The structural composition of the machines is horizontal. The carriage is moved in the front part of the frame. Behind, the grinding head is arranged which has a transverse feed. The control system is concentrated in the front wall of the frame. The machines are of the unit head design. The varia

Card 1/2

Series of Thread-Grinding Machines 36ШС (ZV3nS)

S/123/60/000/017/004/016
A005/A001

tion in the number of revolutions of an article is performed steplessly (electrically). The regulation of the numbers of revolution of the grinding disk can be performed stepwise (by changeable sheaves) in some machines. The pitch chain as well as the chains of packing off and of helical grooves are adjusted by changeable gear wheels. Errors in the pitch of the grinded article can be corrected by means of a correction ruler. The technical characteristics of the series are presented, as well as the requirements to the intermediate products and the requirements to the machined articles. There are 5 figures.

G.A.B.

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

Card 2/2

S/193/60/000/007/006/012
A005/A001

AUTHOR: Barkagan, M. S.

TITLE: Screw Grinding Machine of the MB 16 (MV 16)-Make

PERIODICAL: Byulleten' tekhniko-ekonomicheskoy informatsii, 1960, No. 7, pp.25-27

TEXT: The Moskovskiy Zavod Koordinatno-Rastochnykh Stankov (Moscow Jig Boring Machine Plant) made in December 1959 the screw grinding machine of the MV 16 make. The machine is designed for final grinding of especially precise single-cut worms of large sizes (module from 3 to 16 mm, diameter up to 320 mm, length up to 1,000 mm, length of the grinded section up to 400 mm . The chosen kinematic system between the guide screw and the spindle allows a short and stiff pitch chain and decreases vibrations and fluctuations in the machine due to temperature changes. In contrast to common machines, the blank is driven from the guide screw side, in consequence of which speed-increaser drives are avoided and the guide screw section involved in the pitch system is relieved of the support feed forces. The electromotor driving the blank is installed out of the machine for decreasing the vibrations of the machine. - The machine units effecting on the product are constructed rigid and highly-precise; the front- and rear-sections of the bed are

Card 1/3

a whole; their rigidity is increased by side wings jointed together. The support travels on the bed on two horizontal flat roller ways. The front head stock has a fixed center, the guide screw is short and operates commonly with the reversible unit, because the maximum center distance on the machine is 1,000 mm for 400 mm grinding length. - The machine has a correction facility of guide screw pitch, the correction scale of which is marked on the bed front wall. - The grinder head stock travels on roller ways; its rotative case is drum-shaped and allows the easy turn of the grinding wheel through the angle of product lifting. - The grinding wheel spindle is relieved of the bending forces from the belt drive, and sealed with rubbing membrane sealings. - The straightening device is set up above the grinding wheel increasing in this manner the accuracy of wheel leveling. - The temperature of the cooling liquid is maintained constant automatically by the Freon cooler ИФ-50 (IF-50). - The machine is operated manually as well as semi-automatically as to the following operations: the wheel admission, the operation travel, the wheel removal, the quick-reverse. Automated are: the correcting of the grinding wheel, the feed of the straightening device.- The number of revolutions of the lead screw and the blank are controlled stepless by electric regulation. - The manufacture inaccuracies of the grinded products do not exceed the following values (in mm): inaccuracy of the axial pitch 0.003-

Screw Grinding Machine of the MB 16 (MV 16)-Make

0.008; summary inaccuracy 0.005-0.016; cyclic error 0.003-0.008.

Technical characteristics of the machine:

Maximum screw pitch angle	± 15°	
Sizes of grinding wheels (new)	500 x 32 x 305 mm 500 x 25 x 305 mm 500 x 16 x 305 mm	
maximum peripheral speed of the grinding wheel (for 500 mm diameter)		35 m/sec
number of revolutions of the lead screw (stepless controlled)		
minimum operating	from 1.6 to 40 per minute	
accelerated	80 per minute	
power of electromotors		
grinding wheel drive	2.8 kw	
blank drive	1.1 kw	
overall sizes (length x width x height)	4,490 x 3,510 x 1,850 mm	
weight	7,465 kg	

The machine of the MV 16 make is the basis of several other machines of the makes MB16C1 (MV16S1), MV 15, MV 15 S1, MV 15 S2, MV 24 for different operations: grinding of single- and multi-cut Archimedean-, convolute-, and evolute worms, backing off of various types of large-size milling cutters, etc.

Card 3/3

BARKAGAN, S.L.

USSR/Medicine Dec 48
Hypertonia
Chemotherapy

"An Experiment in Treating Hypertonia With Quinine," S. L. Barkagan, Therapeutic Hosp Clinic, Odessa Med Inst, Polyclinic of UMVD Sanitation Dist, 1 p

"Klin Med" Vol XXVI, No 12

Observations on 52 cases show that quinine cannot be considered a specific cure for hypertonia. Further study of various preparations is necessary. Bromoquinine (7% quinine, 19% bromine) may prove more effective than the quinine sulfate preparation used. Stages and types of the disease where quinine is advisable must be studied.

60/49760

BARKAGAN, T.S. (Krasnodar)

Effect of external roentgen and internal beta irradiations on the development of aseptic inflammation. Pat.fiziol. i eksper. terap. 2 no.1:19-22 Ja-F '58. (MIRA 12:9)

1. Iz kafedry patologicheskoy fiziologii (zav. - prof.I.A.Oyvin) Kubanskogo meditsinskogo instituta.

(RADIATIONS, effects,
beta-rays, eff. of internal irradiation on exper. aseptic inflamm. (Rus))
(ROENTGEN RAYS, effects,
on exper. aseptic inflamm. (Rus))
(INFLAMMATION, experimental,
aseptic, eff. of internal beta & external x-irradiations (Rus))

BARKAGAN, T.S.; ROKENDIK, L.M.

Effect of vitamin C content in the body on the physiological value of preserved blood erythrocytes. Vop. pit. 23 no.5:28-33 S-O '64. (MIRA 18:1)

1. Kafedra biokhimii (zav. - prof. I.I.Matusis) Altayskogo meditsinskogo instituta i Altayskaya krayevaya stantsiya perelivaniya krovi (dir. L.S.Terekhova), Barnaul.

BARKAGAN, T.S.

Effect of the supply rate of vitamin C to the organism on the physiological value of erythrocytes in stored blood. Vop. pit. 24 no. 6:69-73 N-D '65 (MIRA 19:1)

1. Kafedra biokhimii (zav. - prof. I.I. Matusis) Altayskogo meditsinskogo instituta i Altayskaya krayevaya stantsiya perelivaniya krovi, Barnaul.

PARKAGAN, [illegible]

42063. YASINOVSKIY, [illegible] i PARKAGAN, [illegible] Primeneniye penitsilina pri bronkhial'noy astme. Vrach. Delo, 1948, No 11, STB. 979-82

SO: Letopis' Zhurnal'nykh Statey, Vol. 7, 1949

BARKAGAN, Z.S.; YERMULOVICH, Ya.V.

Dynamics of vascular reflex reactions in cases of thyrotoxicosis treated by conservative and surgical methods. Dokl.AN Tadzh.SSR no.14:59-64 '55. (MLRA 9:9)

1.Kafedra gospital'noy terapii Stalinabadskogo gosudarstvennogo meditsinskogo instituta imeni Abuali ibn Sino. Predstavleno chlenom-korrespondentom AN Tadzhikskoy SSR N.F.Berezkinym.
(NERVOUS SYSTEM, VASOMOTOR)

BARKAGAN, Z.S., dotsent

Blood pressure and vascular tonus changes following bites of the blackwolf spider. (Latrodectus tredecimguttatus) Terap.arkh.28 no.4: 45-51 '56. (MLRA 9:9)

1. Iz gospital'noy terapevticheskoy kliniki Stalinabadskogo meditsinskogo instituta imeni Abuali ibn-Sina.

(ARACHNIDISM
latrodectus tredecimguttatus bite causing vasoconstriction & hypertension)
(HYPERTENSION, etiol. and pathogen.
Latrodectus tredecimguttatus bite)
(BLOOD VESSELS, dis.
vasoconstriction caused by Latrodectus tredecimguttatus bite)

BARKAGAN, Z.S.

Effect of venom from the levantine viper (Vipera lebetina) on the permeability of the vascular system. Trudy Stal.med.inst. 21:67-74 '56 (MIRA 11:8)
(VENOM)
(BLOOD VESSELS--PERMEABILITY)

BARKAGAN, Z.S.

Vascular reaction to cold in thyrotoxicosis. Trudy AN Tadzh.SSR 32:71-76 '56. (MLRA 9:8)

1. Iz kafedry gospital'noy terapii (zav.dots. Z.S.Barkagan) Stalinabadskogo gosudarstvennogo meditsinskogo instituta imeni Abuali ibn Siny

(THYROID GLAND--DISEASES) (BLOOD PRESSURE)

PERFIL'YEV, P.P.; BARKAGAN, Z.S.

History of the study of poisonous animals. Trudy Inst.ist.est.i tekh. 16:123-145 '57. (MIRA 10:10)

(Poisonous animals)

BARKAGAN, Z.S.

Effect of venum from scorpions and black wolf spiders on the resorption capacity of capillaries in the human skin. Trudy Stal.med.inst. 21:131-136 '56 (MIRA 11:8)
(VENUM)
(CAPILLARIES--PERMEABILITY)

BARKAGAN, Z.S.

USSR/Pharmacology. Toxicology. Drugs Affecting Blood Coagulation. U-5

Abs Jour : Ref Zhur-Biol., No 7, 1958, 32971

Author : Koz Ya. L., Barkagan Z. C.
Inst : Not given
Title : On the Therapy of Post-Operational Hemorrhages with Preparation from the Venom of the Snake of the Genus Vipera.

Orig Pub : Vesti. oto-rino-laringologii, 1957, No 5, 97-101.

Abstract : The hemorrhagic action of the venom of the snake (Vipera lebetina) was tested under clinical conditions after the harmlessness of the diluted venom when applied locally was proven, and a method was found to sterilize the poison by treating it with chloroform. The venom of the snake (1) in dilutions of 0.001 to 0.01%

Card 1/2

BARKAGAN, Z.S., dotsent

Clinical recognition of cardiac thrombosis. Terap. arkh. 30 no.11: 54-60 N '58. (MIRA 12:7)

1. Iz kafedry propedevtiki vnutrennikh bolezney Altayskogo meditsinskogo instituta.
(THROMBOSIS) (HEART--DISEASES)

BARKAGAN, Z.S., ODINOKOVA, A.A. (Barnaul)

Anterior thoracic wall syndrome after myocardial infarct.
Klin.med. 36 no.8:78-81 Ag '58 (MIRA 11:9)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - dots. Z.S. Barkagan) Altayskogo meditsinskogo instituta.
(MYOCARDIAL INFARCTION, manifest.
anterior theracic pain (Rus))

BARKAGAN, Z.S., dotsent; SUKHOVEYEVA, Ye.Ya.; GORODETSKAYA, N.M.

Clinical and hematological characteristics of hemophilia B (Christmas disease). Probl.gemat. i perel.krovi 4 no.8:13-17 Ag '59.
(MIRA 13:1)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - dotsent Z.S. Barkagan) Altayskogo meditsinskogo instituta.
(HEMOPHILIA)

BARKAGAN, Z.S., dotsent (Stalinabad-Barnaul)

Clinical picture and therapy of intoxication with venoms of Central Asian scorpions. Terap.arkh. 31 no.11 N '59. (MIRA 13:3)
(SCORPIONS)

SHAPIRO, S.Ye.; BARKAGAN, Z.S.

History of hemorrhagic fever in Central Asia. Vop. virus. 5 no. 2:245-246 My-S '60. (MIRA 14:4)
(SOVIET CENTRAL ASIA--EPIDEMIC HEMORRHAGIC FEVER)

BARKAGAN, Z.S.; POLUSHKIN, B.V. (Barnaul)

Significance of blood coagulation in the mechanism of snake venom poisoning. Pat.fiziol.i eksp. terap. 4 no.2:48-54 Mr-Ap '60. (MIRA 14:5)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - dotsent Z.S.Barkagan) i kafedry patofiziologii (zav. - dotsent R.G.Teregulov) Altayskogo meditsinskogo instituta.

(BLOOD--COAGULATION) (VENOM)

BARKAGAN, Z.S.; SUKHOVEYEVA, Ye.Ya. (Barnaul)

Some comments on a discussion of the mechanisms of blood coagulation disorders under clinical and experimental conditions. Probl. gemat. i perel. krovi 9 no.3:22-26 Mr '64. (MIRA 17:10)

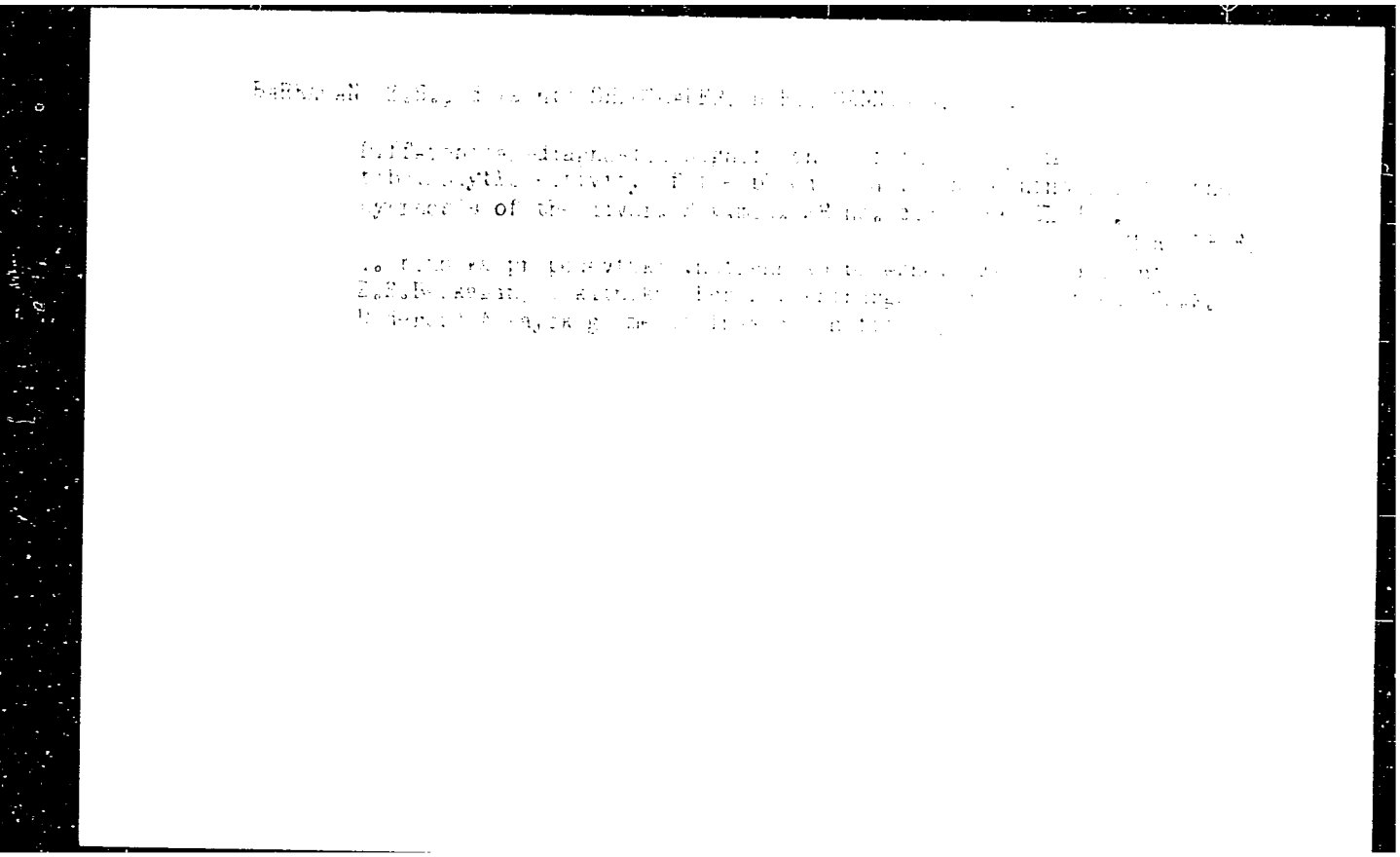
BARKAGAN, Z.S., NEYMARK, I.I.

Nature of postoperative hemorrhages in lung resection. Sov. med. 27 no.1:101-103 Ja '64. (MIRA 17:12)

1. Klinika fakul'tetskoy khirurgii (zav.- prof. I.I. Neymark) i klinika propedevtiki vnutrennikh bolezney (zav.- dotsent Z.S. Barkagan) Altayskogo meditsinskogo instituta.

BARKAGAN, [illegible].S. (Barnaul)

Conference of the use of [illegible] derivatives in [illegible] and other branches of medicine [illegible] [illegible] [illegible] 181- 53 [illegible] [illegible] (M.RA 17:12)



BARKAGAN, Z.S., prof.

Biochemical composition and the medicinal properties of venom.
Priroda 54 no.8:46-51 Ag '65. (MIRA 18:8)

BARKAGAN, Z.S.

Obtaining, and the toxicological testing of the venom of scorpions. Uzb. biol. zhur. 7 no.5:65-70 '63.

(MIRA 18:11)

1. Altayskiy gosudarstvennyy meditsinskiy institut.

MATUSIS, I.I., prof. (Barnaul); BARKHAN, Z.S., dotsent (Barnaul); BOGDANOV, N.G. (Barnaul); YUSIPOVA, Z.A. (Barnaul)

Application of water-soluble vitamin K analog (vikasol) and antivitamins of the dicoumarin series to the treatment of intestinal dyskinesia. Vop.pit. 24 no.4:14-19 Jl-Ag '65. (MIRA 18:9)

1. Kafedra biokhimii (zav. - prof. I.I.Matusis) i propedevtiki vnutrennikh bolezney (zav. - dotsent Z.S.Barkhan) Altayskogo meditsinskogo instituta, Barnaul. Submitted December 8, 1964.

L 29440-66 EWT(1) RO

ACC NR: AP5021471 SOURCE CODE: UR/0026/65/000/008/0046/0051

AUTHOR: Barkagan, Z. S. (Professor)

ORG: none

TITLE: Biological composition and medicinal properties of venom

SOURCE: Priroda, no. 8, 1965, 46-51

TOPIC TAGS: toxicology, therapeutics, poison effect, animal

ABSTRACT: The author states that due to recent discoveries of formerly unknown biological substances contained in snake venom, there is currently a greatly increased interest in its study. He states that there are no "absolutely deadly" snake bites and describes the composition of various types of venom and their effect on humans and other warm-blooded animals. It has recently been established that it is the protease in the venom which is the toxin carrier, and that all other ferments are only secondary in the development of pathological disturbances in the victim's organism. Ye. N. Pavlovskiy, F. F. Talyzin and I. A. Val'tseva have shown that the venom of a cobra causes not only a peripheral paralysis of the breathing apparatus, but also affects its center. Most of the old methods of treating snake

Card 1/2 UDC 577.15

L 29440-66

ACC NR: AP5021471 O

bites have now proved to be either ineffective or even harmful to the victim. New methods of treatment are sought and described. The author concludes that in the future new scientific and medicinal uses of venom will be discovered and that present methods for the treatment of snake bites will be further improved.

SUB CODE: 06 / SUBM DATE: none

Card 2/2

L 12006-65 EWT(l)/EWG(k)/EWT(m)/EPF(c)/EPF(n)-2/EEC(t)/EWP(b)/EWP(t) Pz-6/
Pr-4/Pu-4 IJP(c)/AS(mp)-2/AFWL/SSD/ASD(a)-5/BSD/ESD(gs)/ESD(t) JD/GG/AT
ACCESSION NR: AP4046643 S/0181/64/006/010/3166/3168 B

AUTHOR: Gerasimov, A. B.; Konovalenko, B. M.; Yaroshetskiy, I. D.; Barkalaya, A. A.

TITLE: Impurity photoconductivity produced in germanium by gamma-ray irradiation

SOURCE: Fizika tverdogo tela, v. 6, no. 10, 1964, 3166-3168

TOPIC TAGS: gamma irradiation, photoconductivity, germanium, forbidden band, line spectrum, carrier density, impurity conductivity

ABSTRACT: This is a continuation of earlier research in which one of the authors participated (S. M. Ry*vkin, R. Yu. Khansevarov, I. D. Yaroshetskiy, FTT v. 3, 211, 1961), using a larger γ-ray flux in order to observe a more extensive line spectrum in the forbidden band In this case n- and p-type germanium with initial carrier densities n_0 = = (2--6) x 10^{13} and p_0 = (0.6--2) x 10^{13} cm^{-3} were used. The samples

Card 1/4

ACCESSION NR: AP4046643

were exposed to γ rays from Co^{60} at a dose rate 80--90 r/sec, using an installation described elsewhere (B. M. Konovalenko, S. M. Ry*vkin, I. D. Yaroshetskiy, and L. P. Bogomazov, Atomnaya energiya v. 9, 408, 1960). The results are illustrated in Fig. 1 of the enclosure. The spectral curves disclose a large number of bends and ledges, pointing to a complicated spectrum of the local levels in the forbidden band. Measurements of all the investigated samples indicate the presence of the following energy levels: $E_v + 0.52$, $E_v + 0.48$, $E_v + 0.43$, $E_v + 0.41$, $E_v + 0.37$, $E_v + 0.33$, $E_v + 0.31$, and $E_v + 0.27$. This spectrum coincides fully with the spectrum of the local levels produced in the central part of the forbidden band when germanium is irradiated with fast neutrons, to which the levels with energies $E_v + 0.31$ and $E_v + 0.43$ eV, which are symmetrical relative to the center of the forbidden band, are added. It is further concluded that the various levels introduced by impurities in the central part of the forbidden band are not due to any clustering of the point defects with the atoms of the doping impur-

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000203620011-6"

L 12006-65
ACCESSION NR: AP4046643

2

ity. "The authors are deeply grateful to S. M. Ry*vkin for a discussion of the results." Orig. art. has: 1 figure.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR (Physicotechnical Institute, AN SSSR)

SUBMITTED: 18May64 ATD PRESS: 3120 ENCL: 01

SUB CODE: IC, NP NO REF SOV: 003 OTHER: 000

Card 3/4

L 12006-65
ACCESSION NR: AP4046643

ENCLOSURE: 01

Fig. 1. Photoconductivity spectra of Ge irradiated with gamma rays from Co^{60}.

1 - Sample with initial conductivity n-type and $N_d = 5.5 \cdot 10^{13}$ cm^{-3}; after irradiation $\mu = E_v + 0.27$ ev (T = 85K). 2 - sample with initial conductivity p-type and $N_a = 6.5 \cdot 10^{12}$ cm^{-3}; after irradiation $\mu = E_v + 0.18$ ev (T = 85K).

Card 4/4

BARKALAYA, A. I.; MITROFANOV, V. S. (Leningrad)

Clinical anatomical data on influenzal encephalitis. Klin. med. 40 no.7:57-61 Jl '62. (MIRA 15:7)

1. Iz Instituta farmakologii i khimioterapii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. V. V. Zakusov) i kafedry patologicheskoy anatomii (nachal'nik - prof. S. S. Vayl') Voyenno-morskoy meditsinskoy akademii imeni S. M. Kirova.

(INFLUENZA) (ENCEPHALITIS)

BARKALAYA, A.I.

Transplacental effect of antibiotics from the tetracycline group on the liver of embryos. Antibiotiki 7 no.9:795-799 S '62. (MIRA 15:12)

1. Otdel eksperimental'noy khimioterapii (zav. - prof. A.M. Chernukh) Instituta farmakologii i khimioterapii AMN SSSR.
(TETRACYCLINE) (LIVER)

BARKALAYA, A.I.

Transplacental toxic influence of antibiotic of the tetracycline group on the fetus of warm-blooded animals. Akush. i gin. no.2: 8-11'63. (MIRA 16:10)

1. Iz otdela eksperimental'noy khimioterapii (nauch. - prof. A.M.Chernukh) Instituta farmakologii i khimioterapii (dir. - deystvitel'nyy chlen AMN SSSR prof. V.V.Zakusov) AMN SSSR.
(TETRACYCLINE) (FETUS)

BARKALAYA, A.I.

Transplacental effect of antibiotics of the teracycline group on the kidneys of the fetuses of pregnant rats. Vop.okh.mat. i det.8 no.2:80-83 F'63. (MIRA 16:7)

1. Iz otdela eksperimental'noy khimioterapii (zav. - prof. A.M.Chermukh) Instituta farmakologii i khimioterapii (dir. deystvitel'nyy chlen AMN SSSR prof. V.V.Zakusov) AMN SSSR.
(KIDNEYS—DISEASES) (FETUS—DISEASES)
(TETRACYCLINE—TOXICOLOGY)

BARKALAYA, A.I.

Mechanism of the development of fatty degeneration of the liver caused by tetracycline and its prevention. Antibiotiki 8 no. 11: 1027-1031 N '63. (MIRA 17:9)

1. Otdel eksperimental'noy khimioterapii (zav. - prof. A.M. Chernukh) Instituta farmakologii i khimioterapii AMN SSSR.

BAMBALAYA, [illegible] (Moskva)

Dynamics of fatty dystrophy of the fetal liver under the effect of tetracycline and the process of its reverse development under experimental conditions. Akt. fiziol. i eksp. terap. 7 no.6:57-61 N-D '63. (MIR 17:7)

1. Iz otdela eksperimental'noy khimioterapii (zav. - prof. A.M. Chernukh) Instituta farmakologii i khimioterapii (direktor - deystvitel'nyy chlen AMN SSSR prof. V.V. Zakusov) AMN SSSR.

BARKALAYA, A. I.

"To the problem of tetracycline influence on the fetus."

report submitted for Antibiotics Cong, Prague, 15-19 Jun 64.

Dept of Radiation-Pharmacology, Inst Medical Radiology, Dept of Chemotherapy, and Inst of Pharmacology & Chemotherapy, Moscow.

BARKALAYA, A.I.; PAKHEMOVA, A.M.

Transplacental side effects of tetracyclines on the rabbit fetus. Antibiotiki 8 no.8:728-732 Ag '63. (MIRA 17:5)

1. Otdel eksperimental'noy khimioterapii (zav. - prof. A.V. Chernukh) Instituta farmakologii i eksperimental'noy khimioterapii AMN SSSR.

BARKALAYA, A.I.; CHERNUKH, A.M.

Possibilities of transplacental chemotherapy of the fetus with antibiotics from the tetracycline group. Akush. i gin. 39 no.5:74-79 S-O '63. (MIRA 17:8)

1. Iz otdela khimioterapii (zav. - prof. A.M. Chernukh) Instituta farmakologii i khimioterapii (dir. - deystvitel'nyy chlen AMN SSSR prof. V.V. Zakusov).

BARKALAYA, G.A.

Treatment of inflammatory diseases of the female genitalia with extract of eucalyptus. Sov.med. 23 no.1:106-107 Ja '59.
(MIRA 12:2)

1. Iz ginekologicheskogo otdeleniya (zav. - doktor meditsinskikh nauk I.S. Yeligulashvili) Sukhumskogo rodil'nogo doma (glavnyy vrach T.T. Khubutiya).

(GYNECOLOGICAL DISEASES, ther.
eucalyptus extract in inflamm. (Rus))
(EUCALYPTUS, extracts
in ther. of inflamm. gyn. dis. (Rus))

SOV/19-58-6-48[illegible]/6[illegible]

AUTHORS: Rybin, N. S., Barkalaya, G. Ye., Kozlov, A. D., Golovko, A. N. and Andreyev, V. I.

TITLE: A Unit for Briquetting Vegetable Raw Material (Ustanovka dlya briketirovaniya rastitel'nogo syr'ya)

PERIODICAL: Byulleten' izobreteniy, 1958, Nr 6, p 107 (USSR)

ABSTRACT: Class 45e, 28. Nr 113303 (584665 of 16 Oct 1957) Submitted to the Committee for Inventions and Discoveries at the Ministers Council of USSR. A unit pressing raw material, like poppy shells, and binding pressed briquettes or packing them into bags; enabling briquetting of medical raw material directly in fields; with a drive consisting of cylinder pairs operating in succession, hydraulically connected to the pump of a truck.

Card 1/1

BARKALAYA, O.G.

Study of the accuracy of calculating the gas reserves of the North Stavropol-Pelagiadi gas field, produced by the volume method. Trudy VNII no.36:115-146 '62. (MIRA 15:11)
(North Stavropol-Pelagiadi region--Gas, Natural--Geology)

BARKALOV, I.M.; BERLIN, A.A.; GOL'DANSKIY, V.I.; DZANTIYEV, B.G.

Radiation-induced polymerization of phenylacetylene. Vysokom. soed. 2 no.7:1103-1108 Jl '60. (MIRA 13:8)

1. Institut khimicheskoy fiziki AN SSSR.
(Acetylene) (Benzene)

86322

15 8000 2109 2209

S/190/60/002/012/007/019
B017/B055

AUTHORS: Barkalov, I. M., Gol'danskiy, V. I., Dzantiyev, B. G., Yegorov, Ye. V.

TITLE: The Welding of Teflon and Other Polymeric Materials by the Localized Action of Neutron Radiation

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 12, pp. 1801-1804

TEXT: A simple process was developed for local welding of Teflon and other polymeric materials by irradiating the materials to be welded with thermal neutrons after pretreatment of the material surface with boron- and lithium compounds. The following polymeric materials were welded: Teflon - polystyrene, Teflon - polymethyl methacrylate, polystyrene - polymethyl methacrylate, polyethylene - polystyrene, polyethylene - polymethacrylate. Prior to irradiation, the surfaces to be welded were treated with solutions of boron- and lithium compounds and subsequently exposed to a thermal neutron flux from the ИРТ-1000 (IRT-1000) reactor. The tear resistance of the Teflon - polystyrene weld as a function of the mega-

The Welding of Teflon and Other Polymeric Materials by the Localized Action of Neutron Radiation

S/190/60/002/012/007/019
B017/B055

roentgen dose applied to the surface, at constant B_2O_3 concentration, was investigated and the results are shown in a figure. The tear resistance of the Teflon - polystyrene weld is 120 kg/cm^2. The mechanism involved in welding polymeric materials by localized neutron irradiation is discussed. The thermal effect is assumed to be the main factor in this type of welding. Triple layer welding of polyethylene and Teflon and other polymeric and non-polymeric materials can be effected by applying interleaves of lithium- and boron-containing polystyrene films. There are 1 figure and 7 references: 5 Soviet and 2 US.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

SUBMITTED: May 17, 1960

Card 2/2

BARKALOV, I.M.; GOL'DANSKIY, V.I.; YENIKOLOPOV, N.S.; TEREKHOVA, S.F.; TROFIMOVA, G.M.

Specific features of solid-phase radiation polymerization in the course of irradiation. Dokl. AN SSSR 147 no.2:395-398 N '62. (MIRA 15:11)

1. Institut khimicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Gol'danskiy).
(Polymerization)
(Radiation)

BARKALOV, Anatoliy Ivanovich; BEZGINSKIY, Mikhail Lukich; DUEL', Mikhail Aleksandrovich; MANUYLOV, P.N., redaktor; SKVORTSOV, I.M., tekhnicheskiy redaktor.

[Installation of heat and automatic control devices] Montazh priborov teplovogo kontrolia i avtoreguliatorov. Moskva, Gos. energ.izd-vo, 1955. 200 p. (MLRA 8:11)
(Automatic control) (Electric power plants)

MARKHLOV B.V.

DEGTYAREV, N.V., kandidat tekhnicheskikh nauk, dotsent [redaktor]; MARKHLOV, B.V.; ARKHIPOV, G.V.; PAVLOV, R.V.

[air conditioning] Konditsionirovanie vozdukha. Pod red. N.V.Degtiareva. Moskva, Gos.izd-vo lit-ry po stroitel'stvu i arkhitekture, 1953. 517 p. (MLRA 6:7)
(Air conditioning)

BARKALOV, B.V.

Temperature ranges in air-conditioning systems. Vod. i san.tekh.1 no.2:7-12 My'55. (MLRA 8:11)
(Air conditioning)

BARKALOV B. V.

USSR/Safety Engineering. Sanitation Engineering. Sanitation. L

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10749

Author : Not given
Inst : Not given
Title : A correction to the Article by B. V. Barkalov, "Working Temperature Differences in Air Conditioning System," in Vodosnabzheniye i san. tekhnika, 1955, No 3, 3

Orig Pub: See RZhKhim, 1956, 28060

Abstract: No abstract.

Card 1/1

BARKALOV, B.V.

Air conditioning. Vod. [illegible]n. tekh. no.3:34-37 Mr '57.
(United Stat[illegible] Air conditioning) (MLRA 10:6)

BARKALOV, B.V.

Supply grilles in air conditioning systems. Vod. i san.tekh. no.4:1-8 Ap '59. (MIRA 12:5)
(Air conditioning)

BARKALOV, B.V., inzh., nauchnyy red.; KARPIS, Ye.Ye., inzh., kand.tekhn.nauk, nauchnyy red.; NINENYAGI, N.K., red.izd-va; BOROVNEV, N.K., tekhn.red.

[Air conditioning in industrial and public buildings] Konditsionirovanie vozdukha v promyshlennykh i obshchestvennykh zdaniiakh. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1962. 161 p. (MIRA 15:5)

1. Nauchno-tekhnicheskoye obshchestvo stroitel'noy industrii SSSR. Sektsiya teplosnabzheniya, otopleniya i ventilyatsii. 2. Promstroyproyekt (for Barkalov). 3. Nauchno-issledovatel'skiy institut sanitarnoy tekhniki Akademii stroitel'stva i arkhitektury SSSR (for Karpis).
(Air conditioning)

BARKALOV, B. V., CAND TECH SCI, "PRINCIPLES OF PLANNING CENTRAL SYSTEMS OF AIR-CONDITIONING." MOSCOW, 1961. (MIN OF HIGHER AND SEC SPEC ED RSFSR, MOSCOW ORDER OF LABOR RED BANNER ENGINEERING-CONSTRUCTION INST IM V. V. KUYBYSHEV). (KL, 3-61, 213).

BARKALOV, B.V.; KARPIS, Ye.Ye.

Conference on air conditioning in industrial and public buildings. Vod. i san. takh. no.3:39-40 Mr '61. (MIRA 14:7)
(Air conditioning--Congresses)

BARKALOV, B.V., inzh.; LESKOV, E.A., inzh.

Air conditioning in the U.S.A. Vod.i san.tekh. no.4:37-39 Ap '63. (MIRA 16:4)
(United States--Air conditioning)

BARKALOV, B.V., kand. tekhn. nauk, nauchn. red.; KARPIS, Ye.Ye., kand. tekhn. nauk, nauchn. red.; VINOGRADOVA, G.M., red.

[Air conditioning in industrial public, and residential buildings] Konditsionirovanie vozdukha v promyshlennykh, obshchestvennykh i zhilykh zdaniiakh. Moskva, Stroiizdat, 1964. 159 p. (MIRA 17:11)

1. Vsesoyuznoye soveshchaniye po konditsionirovaniyu vozdukha v promyshlennykh, obshchestvennykh i zhilykh zdaniyakh. 1962, Moscow. 2. Nauchno-issledovatel'skiy institut sanitarnoy tekhniki Gosstroya SSSR (for Karpis). 3. Gosudarstvennyy proyektnyy institut stroitel'noy promyshlennosti (for Barkalov).

BARKALOV, D.M.; OSTAFINSKIY, A.F.

Rapid drift mining with use of ShBM-lu cutter-loaders. Ugol' Ukr. 3 no.1:31-32 Ja '59. (MIRA 12:1)
(Coal mines and mining) (Coal mining machinery)

L 29598-66 EWP(j)/EWT(m)/T WW(c) RM

ACC NR: AP6014088 SOURCE CODE: UR/0025/66/000/004/0033/0038

AUTHOR: Barkalov, I. (Candidate of chemical sciences)

ORG: none

TITLE: Shock wave production of polymers

SOURCE: Nauka i zhizn', no. 4, 1966, 33-38

TOPIC TAGS: shock wave, polymer, polymerization, explosive, monomer

ABSTRACT: The author discusses the use of shock waves for producing polymers. The first method described for producing polymers involves the use of a device firing an ampoule bullet containing a monomer at a rubber diaphragm covering a water-filled vessel. This vessel decelerates the projectile and the shock wave produced by the impact of the projectile causes polymerization of the monomer contained in the ampoule bullet. The velocity of the projectile depends on the powder charge used in the firing device. The operating velocities of the bullet ampoule were from 1 to 2 km/sec. Similar experiments were conducted on a larger scale using a steel container with a large quantity of monopolymer at the bottom and an explosive material at the top. A schematic is given for this device and its various components. The monomer used in both phases of this work was acrylamide. The explosives used were TNT and RDX. Polymerization did not occur below 1500 atmospheres. Past 1500 atmospheres, polymerized mole-

Card 1/2

L 29598-66
ACC NR: AP6014088

cules appeared. The polymer yield increased with pressure until it reached 50 to 60%. Pressure was thought to be the prime cause of polymerization. This hypothesis was disproved by creating high pressures on hydraulic presses. Polymerization did not take place under these conditions. Another hypothesis was that the increased temperatures caused by the shock wave were the contributing factor in polymerization. An experiment was set up in which the monomer was kept at a low temperature by introducing liquid nitrogen into the steel chamber before the explosion. Polymerization still occured under these conditions. Thus the hypothesis that the heat set up by the shock wave was a contributing factor to polymerization was disproved. Various hypotheses have been put forth in an attempt to account for polymerization in the case of a shock wave and its absence in the case where the high pressures required for polymerization are reached slowly. The author discusses as one of the practical applications of shock wave polymer production the manufacture of automobile tire casings. Polymerization would replace the need for sulfur in tire production. Experiments on shock wave polymer production are currently being conducted at the Institute of Chemical Physics, Academy of Sciences SSSR. Orig. art. has: 12 figures.

SUB CODE: 11/ SUBM DATE: none/

Card 2/2

GORBUNOV, M.G., BARKALOV, I.A.

On the stratigraphy of Tertiary flora in the Ob valley near Tomsk.
Dokl. AN SSSR 105 no.5:1062-1065 D '55. (MLRA 9:3)

1. Predstavlene akademikom D.I. Shcherbakovym.
(Ob valley--Geology, Stratigraphic)

BARKALOV, I.A.; OLEKSENKO, V.P.

Relationship between underground water and stratigraphic relief structure of the Dzhezkazgan- Ulu-Tau region. Vest.AN Kazakh.SSR 14 no.10:71-77 O '58. (MIRA 11:12)
(Dzhezkazgan District--Water, Underground)
(Ulu-Tau District--Water, Underground)

OLEKSENKO, V.P., BARKALOV, I.A., POTAPOCHKIN, V.M.

History of valleys in the western part of the Sary-Su--Tengiz watershed. Izv. AN Kazakh. SSR. Ser. geol. no.1:34-47 '60.
(Kazakhstan--Valleys)

BARKALOV, I.A.; KALYGIN, S.K.; OSTROVSKIY, V.N.

New barite deposits in the Dzhezkazgan—Ulu-Tau region in central Kazakhstan. Izv.AN Kazakh.SSR. Ser.geol. no.5:77-78 '62.(MIRA 15:12)
(Kazakhstan—Barite)

BARKALOV, I.A. (Dzhezkazgan); DZHAMAGARIN, V.K. (Dzhezkazgan)

Second birth of a river. Priroda 53 no.6:126-127 '64.
(MIRA 17:6)

BARKALOV, I.A.

Underground waters of the Zhanay structure in Dzhezkazgan District; regime and standards for their exploitation. Trudy Inst. geol. nauk AN Kazakh. SSR 9:89-115 '64.

(MIRA 17:11)

BARKALOV, I.A.

Formation of underground waters in the Dzhezkazgan ore fields.
Trudy Inst. geol. nauk AN Kazakh.SSR no.14:185-193 '65.
(MIRA 19:1)

Barkalov I. M.

21(8) 5(0)

AUTHOR: Lapitskiy, A.V. SOV/55-59-3-29/32

TITLE: The First All-Union Conference of Universities and Colleges on Radiochemistry

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1959, Nr 3, pp 221-223 (USSR)

ABSTRACT: This conference was convened by the initiative of the laboratoriya radiokhimii khimicheskogo fakul'teta MGU (Laboratory of Radiochemistry of the Department of Chemistry of Moscow State University) and was held in Moscow from April 20 to April 25, 1959. It was attended by professors, teachers, and scientific collaborators of 32 universities and colleges of the Soviet Union. In his opening address, An.N.Nesmeyanov, Doctor of Chemical Sciences, stressed the importance of radiochemistry. 30 lectures were delivered by members of Moscow State University: Laboratoriya yadernoy fiziki (Laboratory of Nuclear Physics): N.P.Rudenko, A.I.Sevast'yanov: Production of Beryllium-7 by the Reaction (T,2n); I.Starý, N.P.Rudenko: Production of Radioactive Isotopes by Extraction as β-Diketonates. Laboratoriya radiokhimii (Laboratory of Radiochemistry): An.N.

Card 1/4

Nesmeyanov, B.M. Korolev, L.A.Baronov: Separation of Radioactive Isotopes in the Irradiation of Colloids; An.N.Nesmeyanov, Ye.A.Borisov, E.S.Filatov, V.Kondratenko, Chzhan Tszy-syan, K.Panek, B.Shukla: Secondary Reactions of the Recoil Atoms ^{80}Br and ^{82}Br in Methyl Bromides; B.G.Dzantiyev, I.M.Barkalov, V.V.Khrapov: Reactions of "Hot" Sulfur- and Nitrogen Atoms With Hydrocarbons; B.Z.Iofa, L.V.Bobrov, A.N.Ratov: The State of Radioactive Isotopes in Extremely Dilute Solutions; M.S. Merkulova, V.V.Melikhov: General Theory of the Coprecipitation of Radioactive Elements With Non-isomorphous Crystalline Precipitates; A.V.Lapitskiy, Z.A.Savich, Chzhuan Ya-yuy: Coprecipitation of Protactinium With Complex Compounds of Ti, Nb and Ta; V.M.Fedoseyev, V.V.Isaenkov, V.N.Bochkarev: Application of Radioactive Paper Chromatography; K.B. Zaborenko, A.M.Babeshkin, M.G.Avlichenko: Accumulation and Separation of Recoil Atoms on the Basis of the Example Ra^{224} and Ra^{220}; K.B.Zaborenko, A.M.Babeshkin, V.A.Boyevskaya, L.L.Melikhov: Application of the Emanation Method for the

Card 2/4

Investigation of the Transformation of Solids; V.I.Spitsyn, K.B.Zaborenko, A.M.Babeshkin, M.A.Raikheva: Transformation of Heteropoly-compounds; K.B.Zaborenko, A.M.Babeshkin, I.V. Kovalenko: Geochemistry of Radium; K.B.Zaborenko, V.I. Korobkov: Microanalytical Determination of Uranium by Means of Nuclear Emulsions. An.N.Nesmeyanov, Do Dyk-Man: Partial Vapor Pressure of Co in Alloys With Ni; Yu.A.Priselkov, Yu.A. Sapozhnikov, A.V.Tseplyayeva, V.V.Karelin: The Behavior of a Molecular Metal Beam in the High-frequency Field; I.V.Golubtsov, A.V.Lapitskiy, V.K.Chirvyakov: Vapor Pressure of Niobium Dioxide; I.V.Golubtsov, Yu.A.Likhachev, Ye.K.Bakov: Various Constructions of the Scintillation Attachment to the Apparatus of the Type B. Kafedra analiticheskoy khimii (Chair of Analytical Chemistry): I.P.Alimarin, N.P.Borzenkova: Niobium-95 as a Radioactive Tracer; I.P.Alimarin, T.A.Belyavskaya, Ho Bin-ven: Sorption of Zr by Ion Exchangers; A.I.Busev, V.M. Byr'ko: The Use of Complex Pyrazolindithiocarbonates in Radiometry. Kafedra neorganicheskoy khimii (Chair of Inorganic Chemistry): Yu.A.Ippolitova, Yu.B.Zharov, L.M.Kovba, S.P. Polunin, I.A.Ippolitova: Uranates of Some Bivalent Metals; V.G.Knyazina, O.S.Heikova: Uranium Compounds With Acids of Low-valence P; V.I.Spitsyn: The Influence of the Radioactive Radiation of Solids on Their Physico-chemical Properties; I.Ye.Mikhaylenko, V.I.Spitsyn: Isotope Exchange in the System $K_2SO_4 - SO_3$ at High Temperature. Kafedra khimicheskoy kinetiki

Card 3/4

(Chair of Chemical Kinetics): I.V.Berezin, V.L.Antonovskiy, K.F.Karmanova: Application of Tritium for the Purpose of Determining the Velocity Constants of the Separation of Organo-hydrogen Compounds. An.N.Nesmeyanov delivered a detailed lecture on the Methodology of Radiochemical Instruction at the chemical departments of universities.

BARKALOV, I. M. (USSR)

"Method of Obtaining Sulphur-Labelled Compounds by Reaction X of "Hot" Sulphur-35 Atoms with Cyclic Hydrocarbons."

report presented at the Conference on Radioisotopes in Metallurgy and Solid State Physics, IAEA, Copenhagen, 6-17 Sept 1960.

BARKALOV, I. M., DZANTIYEV, B. G., YEGOROV, Ye. V.,

"Cross-linking of PTFE (Teflon) and other Polymer Materials by the localized Action of Neutron Irradiation (Due to $B^{10}(n\ )\ Li^{7}$ Reaction)"

Paper presented at the "Symposium on the Chemical Effects of Transformations" Prauge, Czech., 24-27 October 1960, sponsored by the IAEA.

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S/190/60/002/007/015/017
B020/B052

15.8106

AUTHORS: Barkalov, I. M., Berlin, A. A., Gol'danskiy, V. I., Dzantiyev, B. G.

TITLE: Radiation Polymerization of Phenyl Acetylene

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 7, pp. 1103-1107

TEXT: Purpose of this paper was the investigation of kinetics and the mechanism of the radiation polymerization of phenyl acetylene which was initiated by electrons with an energy of 1.5 Mev. The irradiation was carried out in special cuvettes (Fig. 1 a). The electron beam was introduced through a plane-parallel glass window 0.5 mm thick. For accurate thermostating within the range of positive temperatures, a different type of cuvette was used (Fig. 1,b). The temperatures of the polymerization were -196 to +85°C. The reaction yield was not higher than 10 - 12%, since in all experiments the initial stage of polymerization was investigated. The radiation dose was determined by a chemical dosimeter (0.02 mole/l of

Card 1/4

Radiation Polymerization of Phenyl Acetylene

S/190/60/002/007/015/017
B020/B052

$CuSO_4$, 0.002 mole/l of $FeSO_4$, and 0.02 n (of H_2SO_4) which was recommended by the Institut im. L. Ya. Karpova (Institute imeni L. Ya. Karpov). The developing Fe^{3+} was photometrically examined by a СФ-4 (SF-4) spectrophotometer. The IR spectra of polyphenyl acetylene were studied by Yu. Sh. Moshkovskiy. The polyphenyl acetylene yield rises proportionally to the dose of wide ranges (10^7 - 10^8 roentgen) (Fig. 2). Even with the largest doses applied, no noticeable destruction of the developed polymer was observed. This seems to prove the absence of effective inhibitor additions whose presence would be indicated by the S-shape of the curve. In the presence of atmospheric oxygen, the polymer yield is increased to the 1.5- to 2-fold under otherwise equal conditions. With a certain dose, the polymer yield does not depend on its quantity, not even at temperatures near the melting point or when the liquid monomer is exposed to radiation. The dependence of the polymer yield on the quantity of the dose was also investigated (Fig. 2) at 0 and -78°C. The extremely low dependence of the polymerization rate of phenyl acetylene on the temperature is also typical. Experiments were carried out regarding the polymerization of phenyl acetylene in nonane and ethyl acetate. In these two solvents the

87031

Radiation Polymerization of Phenyl Acetylene

S/190/60/002/007/015/017
B020/B052

polymer yield differed widely from that expected on the basis of the additivity law (Fig. 3). A very effective radiation energy transfer (the radiation is absorbed by the solvent molecules) to the phenyl acetylene molecules is observed. Substances with structures of the polyacetylene type have the same properties as aromatic hydrocarbons, namely that of taking up the energy of ionizing radiation. The laws of phenyl acetylene polymerization in many respects are specific, sometimes even the opposite of those of the usual radical polymerization. Summing up one may say that the polyphenyl acetylene yield is approximately 8 - 9 molecules when the radiation is 100 ev. In the liquid phase, polymerization and initiation rates are proportional. The activation energy is as low as approximately 700 kcal/mole. A mechanism was suggested which explains the unusual results by the specific properties of highly conjugated products during the polymerization of phenyl acetylene. In these products a strong delocalization of unpaired elements takes place, and the reactivity of similar molecules is reduced with an increase in their length.
There are 3 figures and 6 references: 4 Soviet and 2 US.

Card 3/4

BARKALOV, I.M.; GOL'DANSKIY, V.I.; YEGOROV, Ye.V.

Welding of teflon and other polymeric materials by the localized action of neutron radiation. Vysokom. soed. 2 no. 12:1801-1804 D '60. (MIRA 14:1)

1. Institut khimicheskoy fiziki AN SSSR.
(Polymers, Effect of radiation on)

BARKALOV, I. M.

(b)

Radiation-Induced Polymerization of Monomers in the Solid State

I. M. Barkalov, V. I. Gol'danskii, N. S. Enikolopyan, S. F. Terekhova and G. M. Trofimova

The authors investigated the kinetics of the radiation-induced polymerization of a number of vinyl monomers (acrylonitrile, methylmethacrylate, vinyl acetate, formaldehyde). The polymerization was carried out using 1.5 MeV electrons. The temperature range studied (from −196 to 0°C) included the melting point of the monomer. The temperature-dependence of the polymerization rate near the melting point changed in a variety of ways. The polymer yield in the solid phase reached a limiting value with increasing dose. The influence of phase transitions on the kinetics of polymerization was established. The results are interpreted on the basis of the theory developed and presented by N. N. Semenov at the International Symposium of Macromolecular Chemistry (Moscow, July 1960, and at the 18th Congress of Pure and Applied Chemistry (Montreal, August, 1961).

Institute of Chemical Physics of the Academy of Sciences of the USSR, Moscow

report presented at the 2nd Intl. Congress of Radiation Research,
Harrogate/Yorkshire, Gt. Brit, 5-11 Aug 1962

BARKALOV, I. M.

(b)

Some Peculiarities of the Radiation-Induced Polymerization of Acetylenic Hydrocarbons

V. I. Gol'danskii, I. M. Barkalov and S. S. Kuz'mina

The kinetics of the radiation-induced polymerization (initiated by 1.5 MeV electrons) of phenylacetylene, cyclohexylacetylene and hexine were studied. Experiments relating to the radiation-induced polymerization of tolane and polyethenylbenzene were also carried out. The polymerization was carried out at temperatures from −196 to + 55°C in bulk and in solutions. The rate of polymerization was found to be proportional to the intensity, indicating a monomolecular termination process. Radical inhibitors (benzoquinone, chloranil) in the liquid phase did not affect the rate of the radiation-induced polymerization, and oxygen even accelerated the polymerization of phenylacetylene. The energy of activation of the radiation-induced polymerization of acetylene derivatives was 700–1000 cal/mole. It is not possible to explain the results obtained on the basis of an ionic mechanism of polymerization: e.g. it was found that the polymerization of phenylacetylene, initiated by benzoyl peroxide, takes place with an energy of activation equal to that of the activation of initiation (22000 cal/mole). Unlike many radiation-induced polymerizations which are thought to have ionic mechanisms, we do not observe any change of energy of activation over the melting-point region. For the polymerization in solutions it was found that a considerable transfer of energy takes place from the solvent (nonane, ethyl acetate) to the monomer.

Institute of Chemical Physics, Academy of Sciences of the USSR, Moscow

report presented at the 2nd Intl. Congress of Radiation Research,
Harrogate/Yorkshire, Gt. Brit. 5-11 Aug 1962

43?0

S/844/62/000/000/077/129
D423/D307

AUTHORS: Barkalov, I. M., Gol'danskiy, V. I., Dzantiyev, B. G. and Kuz'mina, S. S.

TITLE: Radiation polymerization of acetylenic hydrocarbons

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 456-459

TEXT: The reaction kinetics and the mechanism of polymerization of phenylacetylene, hexene and cyclohexylacetylene were studied, in both bulk and dissolved monomers, between +80 and -196°C, initiating the polymerization by 1.5 Mev electrons. For bulk polymerization, the yields increased proportionally to the dose of radiation, indicating the absence of inhibitors. Atmospheric oxygen increased the yield of the phenylacetylene polymer, but not those of hexene and cyclohexylacetylene, owing to the absence of the phenyl group in the latter 2 compounds. The rate of polymerization velocity (V) is directly proportional to the radiation intensity (I) and not to

Card 1/2

Radiation polymerization of ... B/044/62/000/010/077/[illegible]
D423/D307

VI as is typical for vinyl monomers. Chain rupture is of a linear nature and is the most important feature of these reactions. The temperature dependence of V was relatively slight for all 5 monomers. Solutions in nonane and ethylacetate were also studied over a wide range of concentration; in all 5 monomers the yields of polymers differed sharply from those expected. A theory for this difference is proposed, substituting the clearly defined process of chain rupture by a single process of chain 'extinction' or 'damping', for which mathematical formulas are presented. This theory accounts for the low activation energy of radiation-induced polymerization of acetylenic hydrocarbons, and also explains the absence of any inhibiting action by oxygen. Mention is also made of the possibility of initiating the polymerization by peroxides. There are 5 figures and 1 table.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AS USSR)

Card 2/2

S/844/62/000/000/104/129
D444/D307

AUTHORS: Barkalov, I. M., Gol'danskiy, V. I., Dzantiyev, B. G. and Yegorov, Ye. V.

TITLE: The welding of teflon and other polymeric materials by the localized action of neutron irradiation

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 616-620

TEXT: When ionizing radiation is used for welding polymer and other materials, its effect must be localized to avoid harmful destructive processes. The authors have developed a simple method for such localization of thermal-neutron effects: the parts to be joined are treated with compounds of boron or lithium. Boron concentration (determined photometrically) in the surface layer was 1 - 12 mg/cm^2. There is an optimum dosage for maximum strength. The welding effect cannot be due to uniform heating of the layer and is attributed to localization of the heating effect in the

Card 1/2

tracks of the strongly ionizing particles produced. The authors have patented a variant of this method, in which the surfaces to be joined have a film of polystyrene containing 1% by weight of boron, an irradiation time of 2 - 5 hours (longer times reduce strength) and doses in the film and in the bulk of the joined materials of 500 - 800 and 40 - 60 megarad, respectively, the following joint strengths (kg/cm^2) were obtained: teflon with teflon, polyethylene, aluminum and quartz, 90 - 110, 90 - 100, 120 - 130 and 80 respectively; polyethylene with polyethylene and aluminum, 130 - 140 and 110 - 135, respectively; aluminum with polymethylmethacrylate 120 - 130. There are 2 figures and 1 table.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AS USSR)

42706

S/020/62/147/002/016/021
B101/B186

AUTHORS: Barkalov, I. M., Gol'danskiy, V. I., Corresponding Member AS USSR, Yenikolopov, N. S., Terekhova, S. F., Trofimova, G.M.

TITLE: Peculiarities of solid-phase radiation polymerization during irradiation

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 2, 1962, 395-398

TEXT: To eliminate the aftereffects liable to falsify the results when the solid-phase irradiated monomer is analyzed after thawing, the radiation polymerization of acrylonitrile (AN) and of vinyl acetate (VA) was studied in an apparatus whereby thermal effects and e.p.r. signals during and after irradiation with 1.6-Mev electrons at -196 to 0°C could be recorded simultaneously. Details of procedure and analysis will be published separately (Vysokomolek. soyed., now printing). Results: With AN, the polymerization was limited below - 140°C (4% polymer yield at -196°C). After repeated irradiation with 8 Mrad in each case, thawing and freezing the sample intermediately, the polymerization limit increased proportionally with the number of irradiations. At -196°C, the molecular weight dropped

Card 1/3

with increasing dose (5-20 Mrad) from $\approx 3.5 \cdot 10^5$ to $\approx 7 \cdot 10^4$. After-polymerization occurred at -140, -120, and -90°C, but not at lower temperatures. At -90°C, the molecular weight then rose to $\approx 10^6$ within 10 hrs. The activation energy of afterpolymerization was equal to that for liquid-phase polymerization: ≈3 kcal/mole. The e.p.r. signals of AN remained unchanged during and after irradiation. The heat of fusion of AN samples irradiated at low temperatures remained constant within the errors of measurement: 35 ± 1 cal/g. The polymerization of AN thus proceeds at $t^o < -140^oC$ completely in solid phase, whereas slight, slow aftereffects occur at $t^o > -140^oC$. The polymerization of VA was not limited. The rate of polymerization of glassy VA was one order of magnitude higher than that of crystalline VA. The molecular weight of glassy VA (at -150°C) decreased with increasing dose from $3 \cdot 10^4$ to $7 \cdot 10^3$. The molecular weight of crystalline VA was only a fraction of that of glassy VA. Afterpolymerization did not occur. When irradiated VA was thawed, the e.p.r. signal disappeared at -129°C, the point of phase transition from glassy to crystalline state. The loss of heat in the phase transition (34 ± 1 cal/g) and the heat absorption (33 ± 2 cal/g) in melting were recorded thermographically. Thus, the polymerization of VA also occurred in

the solid phase. The following causes are assumed for solid-phase radiation polymerization: (a) formation of short-lived excited molecules; (b) loosening of substance along the tracks of primary particles and δ-electrons, which imparts properties to the substance similar to those that occur near phase transitions and near the melting point. There are 4 figures.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

SUBMITTED: August 3, 1962

S/064/62/000/012/001/006
B119/B180

AUTHORS: Barkalov, I. M., Gol'danskiy, V. I.

TITLE: Radiation polymerization

PERIODICAL: Khimicheskaya promyshlennost', no. 12, 1962, 1 - 6

TEXT: The article reviews Western and Soviet research work carried out between 1959 and 1962 on polymerization by means of ionizing radiation. Particular attention is paid to the polymerization of hardly polymerizable monomers (fluorine compounds, oxides of tertiary monovinyl phosphines, etc.), polymerization by the ion mechanism, and polymerization in the solid phase. There are 57 references.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AS USSR)

Card 1/1

BARKALOV, I.M.

"Radiation polymerization in the solid phase."

Report submitted to the Conference on the Application of Large Radiation Sources in Industry, Salzburg, Austria 27-31 May 1963

BARKALOV, I.M., GOLDANSKIY, V.I., AND HO MIN HAO

Radiation polymerization of acetylene hydrocarbons : special features."

Report submitted to the Conference on the Application of Large Radiation Sources in Industry, Salzburg, Austria 27-31 May 1963

BARKALOV, I.M.; GOL'DANSKIY, V.I.

Recent developments in radiation polymerization. Khim.prom. no.12:859-864 D '62. (MIRA 16:2)

1. Institut khimicheskoy fiziki AN SSSR.
(Polymerization)
(Radiation)