

DEMIDOVICH, N., inzh.-polkovnik; BARDIN, Yu., inzh.-mayor

Seconds, minutes passed. Av. 1 kqsm. 46 no.12:18-21 D '63.
(MIRA 17:1)

TSIKERMAN, L.Ya., laureat Stalinskoy premii; YEFREMOV, Ye.A., laureat Stalinskoy premii; BARDIN, Yu.A., laureat Stalinskoy premii, redaktor; NOVOCHADOV, K.G., redaktor.

[Water level measurement for water supply systems] Izmerenie urovnei v sistemakh vodosnabzheniia. Moskva, Izd-vo Ministerstva kommunal'nogo khoziaistva RSFSR. 1954. 98 p. (MLRA 7:7)
(Water supply engineering) (Water meters)

BARDIN, Yu.A.

The Vostochnaya Water-Supply Station. Gor.khoz.Mosk. 36
no.8:40-44 Ag '62. (MIRA 16:1)

1. Glavnyy inzh. Vostochnoy vodoprovodnoy stantsii.
(Moscow—Water supply)

BARDIN, Yu., inzh.-mayor

Headquarters of technical thought. Av.i kosm. 46 no.7:65-68
Jl '63. (MIRA 16:8)
(Aeronautics, Military)

^A
BARDIN, Yu; NIKOLADZE, G., kandidat tekhnicheskikh nauk.

Experience in utilizing slit drains in AKKh filter systems.
Zhil.-kom.khoz. 6 no.5:22-23 '56. (MLRA 9:11)

1. Glavnyy inzhener Stalinskoy stantsii Mosvodoprovoda.
(Drainage)

BARDIN, Yu. A.: SHALASHOVA, Ye.

Preliminary chlorination at the Stalinsk water-supply station.
Zhil.-kom.khoz. 7 no.12:9-12 '57. (MIRA 11:12)

1. Glavnyy inzhener Stalinskoy vodoprovodnoy stantsii g. Moskvy (for Bardin).
2. Zaveduyushchaya laboratoriyey Stalinskoy vodoprovodnoy stantsii g. Moskvy (for Shalashova).
(Stalinsk--Water--Chlorination)

BARDIN, Yu.A., inzh.; SHALASHOVA, Ye.S., inzh.

Use of basic aluminum chloride for the purification of drinking
water. Vod. i san. tekhn. no.6:27-29 Je '65. (MIRA 18:8)

L 23050-65 EWT(m)/EWP(j)/T Fc-4 RM

ACCESSION NR: AP4047842

S/0153/64/007/004/0651/0654

AUTHOR: Radugina, Zh. V.; By*kov, A. N.; Bardina, G. M.

TITLE: Synthesis and investigation of certain colorless and colored polycarbamides. Communication VIII in a series of works in the area of producing and investigating properties of colored high molecular polymers

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 7, no. 4, 1964, 651-654

TOPIC TAGS: color polymer, chromatic high molecular polymer, color polycarbamide, fiber forming polycarbamide, aminoanthraquinone derivative, aminoanthraquinone coloring agent

ABSTRACT: The conditions were investigated for obtaining fiber-forming colorless and colored polycarbamides based on urea and hexamethylene diamine (HMDA) with 1,5-diaminoanthraquinone and alpha-aminoanthraquinone as the colored amine or alpha-aminoanthraquinone acylated with succinic acid as the dye. The molar ratios of urea: HMDA were varied. It was found that with equimolar amounts as high molecular insoluble material was obtained and with a 2:1 ratio a

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ACCESSION NR: AP4047842

high molecular material amenable to fiber production was obtained. The condensations were effected under nitrogen; the temperature was raised from 115-245C in two hours and maintained at 245-250C thereafter. The yield of the high molecular fraction, melting 200-220C, increased with reaction time up to about 8 hours; thereafter the polymer properties deteriorated. Incorporation of up to 0.6% on the total weight of the monomers of 1,5-diaminoanthraquinone had practically no effect on yield, but did increase the fusion temperature and viscosity of the polymer somewhat. Polymerization with the other two coloring agents somewhat reduced the yield and the viscosity of the polycarbamide. The colored products were reprecipitated with acetone or dioxane without changing color. Absorption spectra were obtained. It was concluded that the dye was chemically bonded to the polycarbamide. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: Ivanovskiy khimiko-tehnologicheskii institut, Kafedra tekhnologii khimicheskikh volokon (Ivanov Chemical-Technological Institute, Department of Chemical Fiber Technology)

SUBMITTED: 04Feb63

ENCL: 00

SUB CODE: GC, MT

NO REF SOV: 005

OTHER: 002

Card 2/2

BAKURINA, Ye.V.; BYKOV, A.N.; BARDINA, G.M.

Synthesis and study of some colorless and colored polyureas.
Izv. vys. ucheb. zav.; khim. i khim. tekhn. 7 no.4:651-652 (1964)
(RUSSIA 17112)

1. Kafedra tekhnologii khimicheskikh volokon Ivanovskogo
khimiko-tekhnologicheskogo instituta.

KAPLAN, TS.A. . . . BARDINA, L.I.

Serologic typing of diphtheria pathogens. Zdrav. Bel. 9 no.8:
11-13 Ag'63 (MIRA 17:3)

1. Iz infektsionnoy klinicheskoy bol'nitsy g. Minska (glavnyy vrach Z.G. Alikina) i Belorusskogo instituta epidemiologii, mikrobiologii i gigiyeny (direktor V.I. Votyakov).

BARDINA, L.V.

Resistance of coke to compression at various temperatures.
Trudy Inst. met no.4:58-66 '60. (MIRA 14:5)
(Coke--Testing)

54700

25060
S/080/60/033/010/009/029
D216/D306

AUTHORS: Bardina, N.G., and Lukovtsev, P.D.

TITLE: Electrical conductivity of the system polyvinyl alcohol-zinc chloride (cadmium chloride) - water

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 10, 1960,
2234 - 2238

TEXT: Systems composed of polymers and ionizable substances are used in chemical current sources as solid electrolytes, separators, thickeners or active masses. The present work sets out to study the role of water in the system PVA-ZnCl₂-H₂O, and also the conductivity and viscosity of the system. To determine the role of water in the conductivity of the system, zinc chloride being highly hygroscopic, cadmium chloride was selected instead. The apparatus used is shown in Fig. 5. The film was set between a well-polished silvered plate 2 and the pool of mercury 3. From values of E and

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Electrical conductivity of ...

i obtained by Ohm's law the resistance and conductivity were calculated. The conductivity of the film of pure PVA was $4.15 \times 10^{-11} \Omega^{-1} \text{ cm}^{-1}$ and after dilating the film with water vapor the conductivity rose to $1.42 \times 10^{-6} \Omega^{-1} \text{ cm}^{-1}$ PVA film with 30 % CdCl_2 in the dry condition has a specific conductivity $1.3 \times 10^{-10} \Omega^{-1} \text{ cm}^{-1}$ and after dilating with water vapor its conductivity rose to $1.1 \times 10^{-3} \Omega^{-1} \text{ cm}^{-1}$. The conductivity therefore of PVA films containing CdCl_2 is decided by the presence of water, i.e. by the ionic conductivity of CdCl_2 solution. It is concluded that 1) The electrical conductivity and viscosity were measured on 0.6, 1.12, 2.24, 3.2, 6.4, 7.4, 8.3, and 9.82 N solutions of ZnCl_2 in 30, 20, 10 and 5 % solutions of polyvinyl alcohol and it was established that as the PVA concentration was increased the conductivity fell and the viscosity rose. The relation $\lambda_c \eta = \text{const.}$ was proved correct with.

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D216/D306

Electrical conductivity of ...

in practical limits; 2) The conductivity of PVA films containing varying amounts of CdCl_2 in the dry state differs very little from the conductivity of films without CdCl_2 . The conductivity of these films depends largely on the water present. There are 6 figures and 5 references, 2 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: E. Wood, J. Electroch. Soc., 9, 417, 1956; W.T. Grubb, J. Electroch. Soc., 106, 4, 275, 1956; Am. pat. 2786088, 19 III 1957.

SUBMITTED: January 30, 1960

Card 3/4

BARDINA, N.G.; LUKOVITSEV, P.D.

Mechanism of rectifying action on an oxidized zirconium
electrode. Dokl. AN SSSR 140 no.5:1102-1105 0 '61.

(MIRA 15:2)

1. Institut elektrokhemii AN SSSR. Predstavleno akademikom
A.N. Frumkinym.

(Zirconium)

(Oxidation, Electrolytic)

S/076/63/037/001/006/029
B101/B186

AUTHORS: Bardina, N. G., Lukovtsev, P. D. (Moscow)

TITLE: Kinetics of electrochemical processes on oxidized electrodes.
I. Study of the impedance due to an oxidized zirconium
electrode in redox media

PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 1, 1963, 57-62

TEXT: This study relates to the dependence of active and reactive components of the impedance of an oxidized zirconium electrode (system Zr - ZrO₂ - electrolyte) on the potential change occurring at the oxide - electrolyte interface. A zirconium wire coated with an oxide layer 1000^o thick had been dipped into the redox systems Fe²⁺/Fe³⁺, Fe(CN)₆⁴⁻/Fe(CN)₆³⁻ or I⁻/I₃⁻ which caused the potential change. Potential changes of 0.3 v with respect to an Hg/Hg₂SO₄ electrode in 0.2 N H₂SO₄ were reached by changing the concentration ratio of the oxidized and reduced forms of electrolyte between 0.001 : 1 and 1 : 0.001. The capacitance C and the Card 1/3 ✓

S/076/63/037/001/006/029

Kinetics of electrochemical processes on... B101/B186

resistance R of the electrode were measured at 30°C and 400 - 10,000 cps. The resistance of the oxide layer in the $\text{Fe}^{2+}/\text{Fe}^{3+}$ system at 400 cps was found to decrease by 60%, whereas the capacitance was found to increase by 10% by way of a potential shift from +0.85 to +0.57 v in the system $\text{Fe}^{2+}/\text{Fe}^{3+}$. The same effect was observed in the ferrocyanide system. It is assumed that electrons are injected into the upper barrier layer of the oxide by the establishment of equilibrium between oxide layer and redox medium. For potentials corresponding to an equal concentration of the oxidized and reduced forms of electrolyte, minima occurred on the curve R versus pH and maxima on the curve C versus pH . This is explained by a change in pseudocapacitance and resistance in electrochemical redox processes, the rates of which are lower in the oxide layer than in the metal. R first increases at increasing pH , then reaches a maximum at medium pH , finally decreases again. C decreases as pH increases, reaches a minimum at medium pH , and increases again. The nature of the curves $R(\text{pH})$ and $C(\text{pH})$ remains unchanged at different frequencies. When the frequency increases, the curves become flatter and the R and C values decrease. The dependence of the impedance components on the thickness of the oxide layer and on the concentration of the electrolyte has to be

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Kinetics of electrochemical processes on ... S/076/63/037/001/006/029
B101/B186

measured in order to split the resistance of the electrodes into its individual components corresponding to the resistance of the oxide layer and that of the electrochemical reaction. There are 5 figures.

ASSOCIATION: Akademiya nauk SSSR, Institut elektrokhimii
(Academy of Sciences USSR, Institute of Electrochemistry)

SUBMITTED: June 30, 1961 ;

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BARDINA, N.G.; LUKOVITSEV, P.D.

Kinetics of electrochemical processes on oxidized electrodes.
Zhur. fiz. khim. 37 no.5:1008-1014 My '63. (MIRA 17:1)

1. Institut elektrokhemii AN SSSR.

BARDINA, N.G.

Kinetics of oxidations-reduction reactions on oxidized electrodes, Part
3. Zhur.fiz.khim. 37 no.7:1532-1538 J1 '63. (MIRA 17:2)

1. Institut elektrokhemii AN SSSR.

BARDINA, N.G.

Kinetics of electrochemical processes on oxidized electrodes.

Part 4. Zhur. fiz. khim. 37 no.12:2688-2693 D '63.

(MIRA 17:1)

1. Institut elektrokhemii AN SSSR.

BARDINA, N.G.

Anode oxide films. Usp.khim. 33 no. 5:602-618 My '64.
(MIRA 17:6)

1. Institut elektrokhimii AN SSSR.

L 33165-66 BWP(e)/EWT(m)/T IJP(c) DS/W /JH

ACC NR: AP6019238

(A)

SOURCE CODE: UR/0364/66/002/003/0334/0339

AUTHOR: Bardina, N. G.; Krishtalik, L. I.

ORG: Institute of Electrochemistry, Academy of Sciences, SSSR, Moscow (Institut elektrokhimii Akademii nauk SSSR)

TITLE: Kinetics of the anodic generation of oxygen on graphite. II

SOURCE: Elektrokhiimiya, v. 2, no. 3, 1966, 334-339

TOPIC TAGS: ~~pyrolytic~~ graphite, anodic oxidation, anode polarization, oxide formation, electric capacitance, electrochemical analysis, electric polarization, acid base equilibrium, electrode

ABSTRACT: A study was made of the anodic generation of oxygen on pyrolytic graphite in the potential range described by the Tafel equation. Anodic polarization curves in phosphate buffer and perchlorate solutions were given for pH ranging from 1 to 9.7 and voltage from 1 to 1.8 (saturated calomel electrode). The drop in electrode potential with pH is shown for a constant polarization current of 7.14×10^{-5} a/cm². In phosphate and in some concentrated perchlorate solutions, the potential dropped about 50 mv after increasing the pH to unity; at lower pH, the potential in perchlorate solutions was independent of pH. The electrode capacitance for drop in potential under steady state conditions is given in the equation

$$\varphi_1 = \varphi_0 - b \ln \left(1 - \frac{i_0 \tau}{C \cdot b} \right)$$

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UDC: 541.13

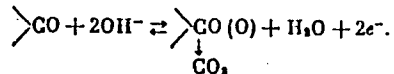
L 38165-66

ACC NR: AP6019238

where i_0 = current density of polarization, to interruption and C (capacitance) = $i_0\tau/\Delta\varphi$. For much longer times

$$\varphi_t = \varphi_0 + b \ln \frac{C \cdot b}{i_0} - b \ln \tau.$$

Values for the capacitance of the graphite electrodes in 1M of phosphate buffer, calculated from the above equations, ranged from 41 to 103 mkf/cm². Explanations for the phenomena were based on analyzing the constant b. The cause of CO₂ formation was two-fold: (1) the decomposition of surface oxides and (2) the electrochemical desorption of CO₂ per division of a water molecule. The first scheme



gave $\partial\varphi/\partial \text{pH} = -59$ mv, close to the experimental values, but did not fit the dependence of C on φ and pH. Orig. art. has: 4 figures, 3 tables.

SUB CODE: 07/ SUBM DATE: 18May65/ ORIG REF: 005/ OTH REF: 002

Card 2/2 MLP

ALENT'YEV, O.O.; BARDINA, N.T.

Metamorphism during calcining of magnesium hydroxide obtained from natural source. Geol. Zhur. Akad. Nauk Ukr. R.S.R., Inst. Geol. Nauk 9, No.3, 43-56 '48.
(CA 47 no.22:12773 '53) (MIRA 3:2)

ALENT'YEV, A.A.; BARDINA, N.T.

Characteristics of crystalline forms of MgO obtained from natural solutions. Min.sbor. no.5:261-266 '51. (MLRA 9:12)

1. Institut geologicheskikh nauk Akademii nauk USSR, Kiyev. (Magnesia)

BARDINA, N. Ye.

Standardization of parts for shoe soles. Nauch.-Issl. trudy
TSNIK no.33:59-65 '63 (MIRA 1881)

BARDINA, E.Ya.

Character of the contact changes of Proterozoic volcanic rocks
in the northern Ulutau. Izv. vys. ucheb. zav.; geol. i razv. /
no.5:44-57 My '64. (MIRA 18:3)

1. Moskovskiy geologorazvedochnyy institut im. S. Ordzhonikidze.

BARDINA, R. A.

"Arteries of the Masticatory Muscles," Stomatologiya, No.1, 1952

BARDINA, R.A.

Structure of intraorganic cardiac veins. Arkh. anat. gist. 1 embr.
31 no.2:46-53 Ap-Je '54. (MLBA 7:8)

1. Iz kafedry normal'noi anatomii (sav. prof. M.G.Prives) I Leni-
gradakogo meditsinskogo instituta imeni akad. I.P.Pavlova (dir.
I.Ye.Kashkarov)
(HEART, blood supply,
*veins, structure)

BARDINA, R.A., dotsent (Leningrad, ul. Voskova, 15, kv. 36)

Characteristics of intra-organic blood supply of the heart.
Vest. khir. 74 no.4:27-34. Je '54. (MLRA 7:7)

1. Iz kafedry anatomii (sav. prof. M.G.Grives) 1-go Leningradskogo
gosudarstvennogo meditsinskogo instituta im. akad. I.P.Pavlova.
(HEART, blood supply.)

BARDINA, R. A.

EXCERPTA MEDICA Sec.18 Vol.1/1 Cardiovascular Jan 57

296. BARDINA R. A. Dept. of Anat., Ist. Med. Inst., Leningrad *The influence of CNS injury on collateral circulation (Russian text)* Arkh. Anatom. Gistolog. Embriol. 1956, 33/1 (55—58) Illus. 4

The development of collateral circulation after severance of the main trunks of the lingual arteries was studied by means of roentgenography and preparations. Seventy-two dogs were used in 6 series of experiments. After destruction of the frontal lobes the number of anastomoses was less than in the control group, and mainly in between the first category branches near the site of the severance of the main trunks. When there was no injury to the brain but the skull was opened and the dura mater incised, or the skull opened only, the mode of development of collateral circulation was analogous to that in the control group, but the number of anastomoses was less. After removal of the right superior ganglion of the cervical sympathetic chain the number of anastomoses and the speed of their development was greater than on the other side serving as control. Bibliography.

Fedai - Leningrad (I, 2, 8, 18)

BARDINA, R.A.

The effect of destroying the cortical integrity of the frontal lobe on collateral blood circulation of the tongue. Biul. eksp. biol. i med. 41 no.1:67-68 Ja. '56 (MIRA 9:5)

1. Iz kafedry normal'noy anatomii (zav.-prof. M.G. Prives) 1-g0 Leningradskogo meditsinskogo instituta imeni I.P. Pavlova (dir. dotsent A.I. Ivanov) Predstavleno deystvitel'nym chlenom AMN SSSR V.N.Chernigovskim.

(TONGUE, blood supply

circ., eff. of frontal lobe cortical inj.)

(FRONTAL LOBE, wounds and inj.

eff. on blood circ. of tongue)

(WOUNDS AND INJURIES

frontal lobe, eff. on blood circ. of tongue)

USSR / Human and Animal Morphology, Normal and Patho- S-4
logic -- Cardiovascular System

Abs Jour: Ref. Zhur-Biol., No 13, 1958, 59883

Author : Prives, M. G.; Bardina, R. A.

Inst : Institute of Experimental Morphology, Academy of
Sciences, Georgian SSR

Title : The Effect on Collateral Circulation of Distur-
bance of the Cortex of the Frontal and Parietal
Lobes of the Brain

Orig Pub: Tr. In-t eksperim. morfol. AN GruzSSR, 1957, 6,
47-54

Abstract: Operations performed on dogs showed that disturbing
the cortex of the frontal and parietal lobes of the
brain retards the development of collateral circu-

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USSR / Human and Animal Morphology, Normal and Patho- S-4
logic -- Cardiovascular System

Abs Jour: Ref Zhur-Biol., No 13, 1958, 59883

lation and reduces the development of the collate-
ral vessels of the posterior extremities and of the
tongue. These symptoms were more pronounced when
the cortex of the frontal lobe was disturbed than
when the cortex of the parietal lobe was disturbed.
-- A. V. Kuz'mina-Prigradova

Card 2/2

31

USSR / Human and Animal Morphology, Normal and Pathological.
Muscles.

S-4

Abs Jour : Ref Zhur - Biol., No 18, 1958, No 83709

Author : Bardina, R. A.
Inst : Academy of Sci. Sciences, RSFSR
Title : Muscles of the Human Tongue, Their Origin and Functional
Importance.

Orig Pub : Izv. Akad. ped. nauk RSFSR, 1957, vyp. 84, 125-131

Abstract : Precise classification of the muscles of the tongue has been established on the basis of studies made of 86 preparations of the human tongue. Their classification into external muscles does not fall in with the anatomical facts: the "internal" muscles are related to the bones of the skeleton or to neighboring organs, while the "external" ones participate in changing the shape of the tongue. According to structure, function and development, three groups of lingual

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BARDINA, R.A. (Leningrad, P-101, ul. Voskova, 15, kv.36)

Collateral circulation following section of the afferent nerves.
Arkh.anat.gist.i embr. 37 no.11:48-56 N '59. (MIRA 13:4)

1. Kafedra normal'noy anatomii (nachal'nik - chlen-korrespondent
AMN SSSR prof. B.A. Dolgo-Saburov) Voyenno-meditsinskoy ordena
Lenina akademii im S.M. Kirova.
(BLOOD VESSELS physiol.)

PRIVES, M.G., prof.; BARDINA, R.A., dotsent

"X-ray anatomy" by D. Nagy. Reviewed by M.G. Prives, R.A. Bardina.
Vest. rent. 1 rad. 36 no. 1:73-74 Ja-F '61. (MIRA 14:4)
(ANATOMY, SURGICAL AND TOPOGRAPHICAL) (RADIOGRAPHY)
(NAGY, D.)

BARDINA, R.A. (Leningrad, ul.Voskova, 15, kv.36)

Changes in the microstructure of the walls of collateral blood vessels following de-efferentation of the pelvic extremities in dogs. Arkh, anat. gist. i embr. 42 no.3:44-54 Mr '62. (MIRA 15:5)

1. Kafedra normal'noy anatomii (ispolnyayushchiy obyazannosti zaveduyushchego - prof. V.M.Godinov) Voenno-meditsinskoy ordena Lenina akademii imeni Kirova.

(BLOOD VESSELS)

(EXTREMITIES, LOWER--INNERVATION)

BARDINA, R.A. (Leningrad, P-101, Voskova, 15, kv.35)

Changes in the microstructure of walls of collateral arteries
after deafferentation of the pelvic extremity in dogs. Arkhiv.
anat. gist. i embr. 43 no.10:61-70 0'62. (MIRA 17:6)

1. Kafedra normal'noy anatomii (ispolnyayushchiy obyazannosti
zaveduyushchego - prof. V.M. Godinov) Voenno-meditzinskoy
ordena Lenina akademii imeni Kirova, Leningrad.

BARDINA, R.A. (Leningrad, ul. Voskova, 15, kv. 36)

Effect of gravitational overload on the arterial wall. Arkh. anat.,
gist. i embr. 47 no. 11:41-44 N '64 (MIRA 19:1)

1. Kafedra normal'noy anatomii (zav. - zasluzhennyy deyatel'
nauki prof. V.N. Murat) Voyenno-meditsinskoy ordena Lenina
akademii imeni Kirova i kafedra normal'noy anatomii (zav. -
zasluzhennyy deyatel' nauki prof. M.G. Prives) 1-go Leningrad-
skogo meditsinskogo instituta imeni akademika Pavlova. Submitted
March 30, 1964.

BARDINA, V.; ZOBACHEV, Yu.; KUZNETSOV, V.; SHCHEHBAKOV, P.; STRUMPE, P.I., kand.
tekhn.nauk, otv.red.; ARAKELOV, V.M., nauchnyy red.; FRESMAN, D.Ya., red.;
FRISMAN, Z.S., red. izd-va; KOTLYAKOVA, O.I., tekhn.red.

[Protection of tanks used on oil tankers] Protektornaya zashchita
tankov neftenalivnykh sudov. Leningrad, Izd-vo Morskoi.transport.
1959. 47 p. (Leningrad. tsentral'nyi nauchno-issledovatel'skii
institut morskogo flota. Trudy no.24) (MIRA 12:5)
(Tank vessels) (Tanks) (Corrosion and anticorrosives)

LAYNER, V.I.;BARDINA, V.A.

Copper plating from pyrophosphate electrolytes. Izv. vys. ucheb. zav.;
tsvet. met. 6 no.3:144-150 '63. (IIRA 16:9)

1. Moskovskiy institut stali i splavov, kafedra korrozii metallov.
(Copper plating)

BARDINA, V.P.; SUPRUN, L.A.; SMCHERBAKOV, P.S.

Resistance of lacquer-paint coatings to sea water while under
the protection of electric current. Lakokras. mat. i ikh.
prim. no.4:38-45 '61. (MIRA 16:7)

1. Sentral'nyy nauchno-issledovatel'skiy institut morskogo
flota.

(Ships---Painting)

BARDINA, V.P.

Using thermoelectric balance meters with a polyethylene filter
for measuring the radiation balance. Trudy GGO no.129:146-148
1962. (MIRA 16:2)
(Solar radiation) (Meteorological instruments)

SUPRUN, L.A., kand. tekhn. nauk; BARDINA, V.P.; VYSOTSKIY, A.A.

Testing by means of models the electrochemical protection against corrosion of merchant ship hulls and determining the effect of propellers on the conditions of functioning of this protection. Trudy TSNIIMF 57:3-25 '64. (MIRA 18:2)

BARDINA, V.P.; SUPRUN, L.A., kand. tekhn. nauk

Investigating coatings for use as an anode screen in cathodic protection. Trudy TSNIIMF 57:26-36 '64.

Investigating the ohmic resistance of eth nol coatings. Ibid.:
37-42 (MIRA 18:2)

DAVIDSON, A.G.; DATLIN, S.V.; KIRICHENKO, G.A.; KOROTKOVA, Ye.N.;
KRAVCHENKO, D.V.; ORLOVA, A.S.; ADADUROVA, A.A.; ARKAD'YEV,
V.G.; BARDINA, Yu.Ya.; BODYANSKIY, V.L.; BONDAREV, S.N.;
GLAZACHEV, M.V.; DAVYDOVA, E.A.; IVANOV, V.N.; KARPUSHINA,
V.Ya.; KREKOTEN', L.P.; LANDA, R.G.; LEVITSKAYA, G.O.; LIPETS,
Yu.G.; LOGINOVA, V.P.; ONAN, E.S.; PEGUSHEV, A.M.; PYKHUNOV,
N.V.; TOKAREVA, Z.I.; KHUDOLEY, V.F.; MILOVANOV, I.V., red.;
MIKAELIAN, E., red.; MUKHIN, R., red.; SVANIDZE, K., red.;
KLIMOVA, T., tekhn. red.

[Africa today; concise reference book on politics and economic
conditions] Afrika segodnia; kratkii politiko-ekonomicheskii
spravochnik. Moskva, Gos. izd-vo polit. lit-ry, 1962. 326 p.
(Africa--Politics)
(Africa--Economic conditions)

BARDINSKAYA, M. S.

DECEASED

1963/3

ANTHOCYANIN
PLANTS METABOLISM

(C1962)

BARDINSKIY, S. I.

"Investigation fo the Asynchronous-Ionic State in a Generator Regime." Min Higher Education USSR, Leningrad Inst of Aviation Instrument Building, Leningrad 1952
(Dissertation for the Degree of Candidate of Technical Sciences)

SO: Knizhnaya Letopis', No. 32, 6 Aug 55

BARDINSKIY, S . I.

"Investigation of an Asynchronous Ion Cascade in Generator Operation." Official opponents: O. B. Bron, Professor, Doctor of Technical Sciences and N. D. Panov, Candidate of Technical Sciences.

Dissertation for the Degree of Candidate of Technical Sciences, defended at Leningrad Inst for the Constrecution of Aircraft Equipment, 16 April 1953. (Elektrichestvo, 1958, ~~pp.~~ Mpx No. 5, pp. 89-91)

ИЗВЕЩАНИЕ, С. 1

Handwritten initials

1941. AN IGNITING CIRCUIT FOR IGNITRONS. S.I. Bardinskiy. *Elektrichestvo* 1957, No. 3, 33-4. In Russian.

The circuit was especially designed for Ignitron-control of the speed of induction motors. A capacitor discharge sends a current pulse through a reactor and a grid-controlled thyatron; the reactor is necessary to render the process oscillatory, so that the thyatron becomes non-conducting at current-zero. The thyatron is biased by a full-wave rectifier circuit, the capacitor being charged from the secondary winding through a selenium rectifier and its discharge current limited by a series resistance. The thyatron is controlled by the anode voltage of the Ignitron which is fed to the primary winding of a transformer, the secondary winding of which is connected through the biasing circuit to the thyatron grid. The selenium rectifier cuts off the negative half-wave of the anode voltage which would have an adverse effect on the operation of the thyatron. The circuit described is not affected by frequency and value of the anode voltage. The ignition of the Ignitron takes place at the instant at which the anode voltage is capable of firing the thyatron.

B. F. Kraus

BF

Leningrad Inst. Aviation Instrument Building

AUTHOR: Bardinskiy, S.I. (Cand. Tech. Sci.) SOV/110-58-10-3/24

TITLE: A system of controlling a semi-conductor rectifier by means of a mechanical commutator. (Sistema upravleniya poluprovodnikovym vypryamitelem pri pomoshchi mekhanicheskogo kommutatora.)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, No. 10. pp. 12-17 (USSR)

ABSTRACT: The extensive use of power germanium rectifiers is impeded by the absence of control methods comparable with grid-control of ionic rectifiers. Semi-conductor rectifiers have been controlled by means of series chokes and by varying the transformer output voltage, but both methods have their disadvantages and cannot be used under inverter conditions. This article describes a method of control that employs a mechanical commutator. Only the three-phase bridge circuit is described, because this is the most suitable for power applications, but the method can be applied to other circuits. Normal grid-control in valves retards the instant of ignition, so altering the mean value of the rectified voltage. The same results can be achieved with a mechanical commutator, connected in series with the valve, as shown in Fig. 1. The commutator is driven by a synchronous motor and the instant of switching can be varied, for example by rotating the motor stator. The contact head of a mechanical commutator for 60 kW (300 V, 200 A d.c.) used in tests on germanium rectifiers is shown in Fig. 2. In this equipment the contacts are closed by a cam.

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SOV/110/58-10-3/24

A system of controlling a semi-conductor rectifier by means of a mechanical commutator.

Sparkless operation can be ensured; the necessary conditions are considered with reference to Figs. 3. & 4., which show curves of the cyclic interruptions. An expression is derived for the limits of rectifier voltage control that can be achieved without sparking at the contact. Sparking may also result from a rapid increase in the current between contacts that have not yet fully closed. This effect is reduced by introducing chokes whose magnetic circuit is made of material with a rectangular magnetisation loop, which delay the current increase as required. Sparking can then be prevented at voltages up to 300 V per contact gap, and voltages of 600 V can be met by using two gaps in series. Currents of up to 20 000 A have been handled by the contacts of existing mechanical rectifiers. The reverse currents of semi-conductor rectifiers, which are about 0.1% of the forward current, may have a harmful influence on the contacts when very heavy currents are rectified. However, the contacts can be shunted by lower-power diodes, as shown in Fig.6., to pass the reverse current and remove the reverse voltage from the contacts altogether. The operation of the proposed rectifier control system was tested experimentally. Germanium rectifiers type VG-10 than can deliver a rectified current of 30A were supplied from a 220 V circuit. Oscillograms taken under rectifier and inverter conditions are drawn in Figs.7a. and b. respectively. They clearly illustrate the operation of the chokes and the removal of reverse-voltage by diodes. Premature magnetisation of the reverse-current chokes when their auxiliary

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SOV/110-58-10-3/24

A system of controlling a semi-conductor rectifier by means of a mechanical commutator.

windings are omitted, is illustrated by the oscillograms in Fig.7. The system is as reliable as a grid-controlled ionic rectifier and has none of the disadvantages of an ordinary mechanical rectifier. The main drawback of the system is the inertia of the mechanical timing control. Variation through the entire range of timing control takes from 1 to 10 seconds, depending on the output of the system. The efficiency obtained from the germanium rectifiers is very high, and the overall efficiency of an installation may be 97%. Little bulk will be added to the rectifier by the control system. There are 7 figures and 4 literature references (2 Soviet and 2 German).

SUBMITTED: April, 4, 1958.

1. Rectifiers--Control systems
2. Rectifiers--Performance
3. Semiconductors--Performance
4. Commutators--Performance

Card 3/3

8(3)

SOV/105-59-2-13/25

AUTHORS: Bal'yan, R. Kh., Candidate of Technical Sciences,
Bardinskiy, S. I., Candidate of Technical Sciences

TITLE: On the Selection of the Optimum Shape and Design of Small
Transformers (K vyboru optimal'noy geometrii i konstruktsii
transformatorov maloy moshchnosti)

PERIODICAL: Elektrichestvo, 1959, Nr 2, pp 53-58 (USSR)

ABSTRACT: The theoretical arguments for the optimum shape of all types
of single-phase power transformers for high frequencies
with immediate consideration of the heat development are set
forth, and a comparison of different transformer types is
given. As criteria of the optimum the dimension and weight
indices per unit capacity, i.e. the specific volume and the
specific weight of the transformer was used. For the theoretical
analysis, the following assumptions were made: trans-
former capacity denotes the electromagnetic capacity; the mag-
netizing current is not considered; overheating the windings
is assumed to be defined by the total copper and iron losses
on the cooling surface, the weight G denotes the copper and
iron weight, the volume V is the volume of the circumscribed
parallelepiped. The formulae (10) and (12) are derived for

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308, 105-59-2-13/25

On the Selection of the Optimum Shape and Design of Small Transformers

the specific volume and the weight. They are universal and express not only the qualitative but also the quantitative relationship between the specific weights and volumes on the one hand and all the main factors effecting them, on the other. Formally, these formulae apply for any frequency f . But there is a capacity limit for each frequency below which the condition $\nu \geq 1$ can not be met (for the exorbitant rise of the magnetizing current). From the formulae (10) and (12) follows that, under otherwise equal conditions, the volume and the weight of the transformer depend exclusively upon the factors k_v and k_w . These factors determine entirely the geometrical relations of the core according to the formulae (11) and (13). Therefore they can be called the geometry factors for volume and weight. Optimum shape will be that for which k_v and k_w will attain the smallest values. $\nu = \frac{P_i}{P_c}$, p_i - iron losses, p_c - copper losses. For determining the optimum shape, for each transformer type (core, shell and toroid type transformer) the series of curves were plotted for k_v and k_w with one constant

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SOV/105-59-2-13/25
On the Selection of the Optimum Shape and Design of Small Transformers

and two variable dimensions (x,y,z) , each. It is shown that the conditions of minimum weight do not correspond with those of minimum volume. Therefore, the optimum shape is different for both cases. The data obtained by tests permit to establish a useful system for the build-up of core series. The comparison of the three transformer types showed that the best type would theoretically be the core-type transformer. This opinion was fully confirmed by experiments. L. M. Gartkevich and A. A. Kurnukin took part in the experimental work. Somewhat earlier, A. F. Senchenkov found also by experiments that the core-type transformer is preferable to the shell-type transformer. There are 8 figures and 6 tables.

SUBMITTED: July 14, 1958

Card 3/3

AMATUNI, Napoleon Leonovich, dots.; BARDINSKIY, Sergey Ivanovich, dots.; DREVS, Georgiy Vyacheslavovich, dots.; IL'IN, Boris Vladimirovich, dots.; KNORRING, Gleb Mikhaylovich, kand. tekhn.nauk; PASECHNIK, Stepan Yakovlevich, prof.; PREOBRAZHENSKIY, Aleksey Alekseyevich, dots.; ROZENBERGER, Boris Fedorovich, dots.; SOLOV'YEV, Vladimir Ivanovich, dots.; YASTREBOV, Petr Parfen'yevich, prof.; BELOVIDOV, B.S., doktor tekhn.nauk, prof., retsenzent; ARTEMOVA, T.I., red. izd-va; TUPITSYNA, L.A., red.izd-va; SHVETSOV, S.V., tekhn. red.

[Electrical engineering and electric equipment] Elektrotekh- nika i elektrooborudovanie; obshchii kurs. [By] N.L.Amatuni i dr. Moskva, Rosvuzizdat, 1963. 646 p. (MIRA 16:9)

1. Novocheb'kasskiy politekhnicheskii institut (for Belovidov). (Electric engineering--Handbooks, manuals, etc.) (Electric apparatus and appliances--Handbooks, manuals, etc.)

BABITSKIY, S.I., kand.tekhn.nauk

Design of a resonant frequency transducer. Vest.elektrom. 34
no.8:65-70 Ag '63. (MIRA 16:9)
(Electric motors)

ZAVALISHIN, Dmitriy Aleksandrovich; BARDINSKIY, **Sergey** Ivanovich;
PEVZNER, Osip Borisovich; FROLOV, Boris Vasil'yevich;
KHRUSHCHEV, Vitaliy Vasil'yevich; USSER, A.S., red.;
ZHITNIKOVA, O.S., tekhn. red.

[Electrical machines with low-power ratings] Elektricheskie
mashiny maloi moshchnosti. [By] D.A.Zavalishin i dr. Moskva,
Gosenergoizdat, 1963. 431 p. (MIRA 17:2)

BARDIYER, F.F.; GORDIYCHUK, A.M.; RIZHKOV, I.I.

Methods for lowering production costs in the Ukrainian industry.
("The costs of production and how to lower them in the Ukrainian
industry." Reviewed by F.F. Bardier, A.M. Hordiichuk, I.I. Ryzhkov).
Visnyk AN URSS 28 no.5:73-76 My '57. (MIRA 10:7)
(Ukraine--Costs, Industrial)

GOLIGORSKIY, S.D., kandidat meditsinskikh nauk; BARDIYER, L.G.

Michelson's vesico-sigmoid anastomosis in total epispadias.
Urologiya no.2:78-79 Ap-Je '55. (MLRA 8:10)

1. Iz gospiatal'noy khirurgicheskoy kliniki (sav.--prof.
P.V.Ryzhov) Kishinevskogo meditsinskogo instituta na baze
Respublikanskoy klinicheskoy bol'nitsy (glavnyy vrach
M.G.Zagarskikh)
(EPISPADIAS, surgery,
vesico-sigmoid anastomosis)

BARDIYER, L.G.

GOLUGORSKIY, S.D., kandidat meditsinskikh nauk; BARDIYER, L.G.

A case of plastic surgery of the bladder sphincter in congenital bifurcation of the penis with incontinence. Urologia, 22 no.1:70-71
Ja-F '57 (MLRA 10:5)

1. Iz urologicheskogo otdeleniya Respublikanskoy klinicheskoy bol'nitsy, bazy gosspital'noy khirurgicheskoy kliniki (zaveduyushchiy-professor P.V. Ryzhov; glavnyy vrach bol'nitsy N.A. Testemitsanu) Kishinevskogo meditsinskogo instituta.

(BLADDER, surg.

sphincter plastic in congen. bifurcation of penis & incontinence)

(PENIS, abnorm.

bifurcation with congen incontinence, plastic surg. of sphincter)

L 31983-66

ACC NR: AP6005338

SOURCE CODE: UR/0413/66/000/001/0080/0080

INVENTOR: Gal'perin, Yu. Sh.; Soms, M. K.; Bardiya, N. M.; Gorlin, I. K. 8

ORG: none

TITLE: Artificial respiration²² equipment. Class 30, No. 177597 [announced by the All-Union Scientific Research Institute for Medical Instrument and Equipment (Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskikh instrumentov i oborudovaniya)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1966, 80

TOPIC TAGS: artificial respiration, respiration equipment, respiration device

ABSTRACT: An Author Certificate has been issued for an artificial respiration device containing a power-operated blower, a membrane box, inspiration and expiration bellows, a humidifier-heater, a dosimeter kit with an elastic bag, and a system of tubing complete with cocks and valves. To perform supplementary respiration as well as artificial respiration with active inspiration and passive expiration, the membrane box is equipped with a contact device for control, when the patient attempts to breathe, an electromagnetic valve in the suction line of the blower, and a cock which will take the patient off the expiration bellows and simultaneously connect it with the atmosphere. To simplify the set-up procedure for specific operating

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UDC: 615.816-78

L 31983-66
ACC NR:AP6005338

conditions, the valve for setting the exhalation time is mechanically linked with a valve for setting the ventilation minute volume. A dual valve is installed in the inspiration and expiration lines for rapid switching from artificial respiration to spontaneous and vice-versa. To broaden the potential of the device, there is also a valve for switching in the dosimeter kit as well as one for increasing the resistance to expiration. In order to save an oxygen during artificial respiration with a semiopen system, there is a three-way cock which is placed in line with the evacuation control valve and is designed with a connection to the air (see Fig. 1)

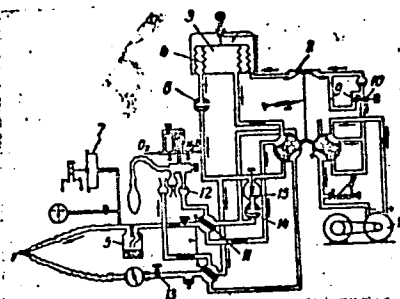


Fig. 1. Artificial respiration device. 1—blower; 2—membrane box; 3—inspiration bellows; 4—expiration bellows; 5—humidifier-heater; 6—valve for making artificial respiration with active inspiration and passive expiration; 7—membrane box with contact device; 8—electromagnetic valve; 9—expiration time valve; 10—ventilation minute volume valve; 11—dual cock; 12—dosimeter kit valve; 13—resistance-to-expiration valve; 14—three-way cock; 15—evacuation control valve.

[LD]

Orig. art. has: 1 figure.

SUB CODE: 06/ SUBM DATE: 15Jun64

Card 2/2 LC

MONKEVICH, M.P.; BARDIYER, N.M.; TSEYTIM, P.I.

Model of electrophoretic apparatus from the experimental plant of
the Academy of Medicine of U.S.S.R. Biul. eksp. biol. i med. 41 no.4:
77-78 Ap '56. (MLRA 9:8)

1. Iz Opytnogo zavoda AMN SSSR i Instituta eksperimental'noy biologii
AMN SSSR, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR V.N.
Chernigovskim.

(ELECTROPHORESIS, apparatus and instruments,
new model (Rus))

BARDIYER, N.M.

Dry spirometer. Med.prom. 13 no.9:55-57 S '59.

(MIRA 13:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskogo instrumentariya i oborudovaniya.

(SPIROSCOPE AND SPIROSCOPY)

SAVACHENKO, R. I.; BARDIYER, N. M.

Portable universal UNAP-2 apparatus for inhalation anesthesia.
Nov. med. tekhn. no. 3:3-13 '61. (MIRA 14:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskikh
instrumentov i oborudovaniya.

(ANESTHESIOLOGY--APPARATUS AND INSTRUMENTS)

BARDISH, N.N.

2
5

Corrosion Resistance Properties of Stainless Steel in Oxidizing Solutions.—Corrosion of Steel in Solutions of Chromic Acid. M. M. Kurtenov, G. V. Akimov, and N. N. Bardish. (*Doklady Akademii Nauk S.S.S.R.*, 1982, 87, 4, 625-626). (In Russian). The influence of chromic acid on the corrosion of some stainless steels (Cr steels; 18/8 steels with Ti, Mo, and Mo + Nb; and Cr-Mn-Ni steel) were investigated. The influence of acid concentration and temperature on the speed of corrosion were also tested. The results are assembled in tables.—v. o.

BARDNIKOV, A. I.

"Statistics of the Soviet Public Health Service", Slovar'-spravochnik po sotsial'no-ekonomicheskoy statistike, 1944, pp 259-269.

Trans.

M-225, L Mar 55

L 00029-66 EMT(m) DIAAP
ACCESSION NR: AP5020311

UR/0186/65/007/004/0494/0496
541.183.5:546.73.02.60:552.57

AUTHOR: Bardnikov, A. I.; Oreshko, V. F. (Deceased)

TITLE: Effect of stable cobalt on adsorption of Co-60 by peat. 36
B

SOURCE: Radiokhimiya, v. 7, no. 4, 1965, 494-496 19

TOPIC TAGS: cobalt 60, soil, adsorption

ABSTRACT: The extent to which fission products penetrate plants and water depends to a large extent on their behavior in soil, slime and various types of deposits. This work presents experimental data on adsorption of radioactive cobalt from solution by peat as a function of the concentration of stable cobalt. In order to evaluate the magnitude of the adsorption of Co-60 under these conditions the distribution coefficient was determined, the numerical value of which in the soil-solution system was calculated from the decrease of the activity of the starting solution. The mean values of the distribution coefficient on three parallel experiments are shown in Fig. 1 of the Enclosure. With increase of the concentration of stable cobalt at essentially constant pH the distribution coefficient is lowered to a minimum. When the concentration of stable cobalt exceeds $0.6 \cdot 10^2$ mg-equiv./g of peat

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L 00029-66
ACCESSION NR: AP5020311

the adsorption process practically ceases. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 19Feb65

ENCL: 01

SUB CODE: NP, LS

NO REF SOV: 004

OTHER: 002

Card 2/3

L 00029-66

ACCESSION NR: AP5020311

ENCLOSURE: 01

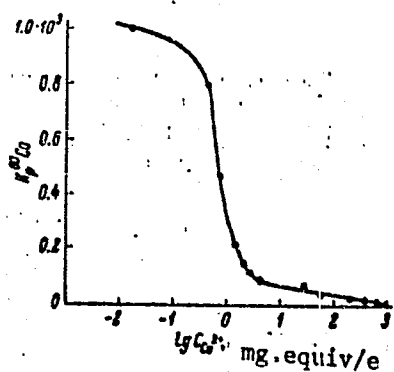


Fig. 1. Distribution coefficient of Co^{50} as a function of the concentration of inactive cobalt.

Card 3/3

BARDIEH, V. V. (Cand. in Tech. Sci.), VIZUNYU, I. (Eng.) and KORELEV, V. V. (Eng.)

"Magnetic Operative Memory Device with Decoder Employing a Wound-Ribbon Magnetic Core"
a paper presented at the Conference on Methods of Development of Soviet Mathematical
Machine-Building and Instrument-Building, 12-17 March 1956.

Translation No. 596, 8 Oct 56

9(2)

PHASE I BOOK EXPLOITATION

SOV/3178

Bardizh, V. V.

Voprosy impul'snogo peremagnichivaniya ferritovykh serdechnikov (Problems of Ferrite Core Switching by Pulse) Moscow, 1958. 20 p. 500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut tochnoy mekhaniki i vychislitel'noy tekhniki.

PURPOSE: This monograph is intended for specialists in magnetic core circuit elements.

COVERAGE: The author investigates ferrite cores used in circuits of high-speed computers where these cores are subjected to current pulses. For his tests he used ferrite cores of the VT-1, VT-2, VT-4 and K-28 types, produced by the Institut tochnoy mekhaniki i vychislitel'noy tekhniki, Academy of Sciences, USSR, and also cores of the S-1 type produced by General Ceramics Corporation, USA, and the D-2 type produced by Mullard, England. Pulse duration was 4 microseconds in each case. Pulses of one polarity remained unchanged and maximum in amplitude; pulses of opposite polarity could be changed in amplitude from zero to maximum. The effect of geometrical dimensions of the

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Problems of Ferrite (Cont.)

SOV/3178

cores on their parameters were investigated by changing the ratio of d/D for one type of core (d is the inner and D is the outer core diameter). An analysis of experimental curves of switching time as a function of driving field is given. Some ways to decrease the access time of magnetic matrix memory are discussed. Scientific worker B. N. Morozov participated in the work. There are six references: 4 Soviet and 2 English. There is no Table of Contents.

AVAILABLE: Library of Congress (TK7835.B3)

Card 2/2

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3-4-60

BAR DIZ H U U

26(2) PHASE I BOOK EXPLOITATION 507/2675
Moscow. Dom nauchno-tekhnicheskoy propagandy in. P. E. Dzerzhinskogo

Yuzhital'maya tekhnika i yeye primeneniye (Computation Technique and its Application) Moscow, Gosenergetizdat, 1959. 391 p. (Series: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy KNPSR) 5,000 copies printed.

Ed. (Title page): S. A. Lebedev, Academician; Ed. (inside book): V. I. Sevel'yev; Tech. Ed.: G. I. Mkrtyev.

PURPOSE: This collection of articles is intended for scientific, engineering and technical personnel engaged in research, design and operation of digital and analog computers. It may also be used by students of vases specializing in computers.

CONTENTS: The authors present fundamentals of digital computers, their elements and units such as arithmetic units, internal and external memory, control devices, and logic units. They also discuss the operation of digital computers and consider the fundamentals in the theory of logical circuits. They also discuss problems of programming and explain the operation of analog computers and their elements. Brief discussion of mathematical instruments is also presented. The articles were presented at a computer seminar arranged by Moscow Center for Scientific and Technical Propaganda named P. E. Dzerzhinskii (Moscow Center for Scientific and Technical Propaganda named P. E. Dzerzhinskii) in 1957. No personalities are mentioned. References appear at the end of some articles.

Mallikov, I. A., Engineer. Control Devices of Universal High-speed Computers 87
The author discusses the principle of operation computer control devices and describes the control panel. He also explains methods of checking computer performance. There is 1 Soviet reference.

Radish, V. Z., Candidate of Technical Sciences. Operational Magnetic Memory Units 105
The author discusses the principle of using magnetic cores with the rectangular hysteresis loop for operational memory units. He describes methods of storing, connecting cores and explains the operation of various matrix circuits such as those with a dynamic bias and with a transformer. Memory units for multidigit numbers are also discussed. There are 6 references: 2 Soviet and 4 English.

Laut, V. E., Operational Memory Units Using Cathode-ray Tubes 133
The author discusses the operation of memory units and presents a block diagram of a parallel-connected memory circuit. He also discusses the operation of various types of tubes used in memory circuits and describes a barrier-grid storage tube and its operation. There are 2 references, both Soviet.

Kulikov, L. V., Engineer. Operational Memory Unit Using Capacitors and Semiconductor Elements 156
The author discusses the principle of operation of memory units using capacitors and semiconductor devices and describes their matrix circuits. He discusses the requirements of crystal diodes and presents the results of an experiment conducted with a memory unit using a Di-15 type diode. He also discusses problems of increasing speed of operation of a memory unit and considers the possibility of using such devices in memory circuits. There are 10 references: 1 Soviet and 9 English.

Tyapkin, M. V., External Devices of Universal High-speed Computers 168
The author discusses input and output devices of high-speed computers and describes methods of feeding information to computers and obtaining calculated results. He also explains the operation of the external assembly. There are no references.

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AUTHOR:

Bardizh, V. V., Candidate of Technical Sciences

SOV/30-59-4-13/51

TITLE:

News in Brief (Kratkiye soobshcheniya) Exposition of and Symposium on Electronic Computers (Vystavka i simpozium po elektronnyim vychislitel'nym mashinam)

PERIODICAL:

Vestnik Akademii nauk SSSR, 1959, Nr 4, p 101 (USSR)

ABSTRACT:

The exposition and symposium were held in London between November 28th and December 4th, 1958. 41 English firms took part therein. Computers of various types as well as their parts were shown. For the construction of the computers the English firms largely used semiconductor elements and ferrite nuclei. The reports held at the symposium mainly dealt with problems of the use of the individual computers. The author of the present paper states that exposition and symposium gave evidence of the fact that at present much attention is paid in England to the development and application of computing technique.

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PHASE I BOOK EXPLOITATION SOV/5550

Akademiya Nauk SSSR. Laboratoriya magnitnykh elementov.

Magnitnyye elementy; sbornik statey (Magnetic Elements; Collection of Articles) Moscow, 1960. 313 p. 700 copies printed.

Sponsoring Agency: Institut tochnoy mekhaniki i vychislitel'noy tekhniki Akademii nauk SSSR.

No contributors mentioned.

PURPOSE: This collection of articles is intended for specialists concerned with digital computer technique.

COVERAGE: This collection of articles contains a part of the papers issued in 1956-1959 by the Laboratoriya magnitnykh elementov Instituta tochnoy mekhaniki i vychislitel'noy tekhniki AN SSSR (Laboratory of Magnetic Elements of the Institute of Precision Mechanics and Computing Technique, AS USSR). They cover the following topics: polarity reversal of ferrite cores; static and pulse characteristics of ferrite cores with a rec-

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Magnetic Elements (Cont.)

SOV/5550

tangular hysteresis loop and the equipment used for determining them; the operation of push-pull shift registers using ferrite diode elements; several types of storage devices; new magnetic components; transfluxors; and magnetic input drives. No personalities are mentioned. References accompany each article.

TABLE OF CONTENTS:

Foreword	3
1. Kobelev, V. V., and I. I. Nadashkevich. Concerning the Problem of the "Self-Reversal" of Magnetic Polarity of Mn-Mg and Ni-Zn Ferrites (1958)	6
2. Bardizh, V. V. Problems of Pulse Magnetic Polarity Reversal of Ferrite Cores (1958)	16
3. Bardizh, V. V., and V. V. Kobelev. Calculation of Magnetic Polarity Reversal Curves of Ferrite Cores (1958)	33
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Magnetic Elements (Cont.)

SOV/5550

4. Bardizh, V. V. Characteristics of Cores With Rectangular Hysteresis Loops (1957) 57
5. Vizun, Yu. I. Equipment for the Investigation of Magnetic-Core Properties (1957) 75
6. Kobelev, V. V. Oscillographic Installation for Taking the Hysteresis Loop of Small Ferrite Cores (1959) 96
7. Kobelev, V. V. Operational Stability of Magnetic Push-Pull Shift Registers (1956) 115
8. Berezhnoy, Ye. F. Operating Register on a Magnetostriction Delay Line (1957) 130
9. Kobelev, V. V., and Yu. I. Vizun. Magnetic Storage Device With Programming Control (1958) 163

Card 3/4

Magnetic Elements (Cont.)

SOV/5550

10. Bardizh, V. V., Yu. I. Vizun, and V. V. Kobelev. Magnetic Operating Storage Device With Decoders Made up of Tape Cores (1956) 178
11. Berezhnoy, Ye. F. Magnetostriction Delay-Line Storage Device With Intermediate Code Reading (1959) 202
12. Bachin, O. V. Possibility of Using Transfluxors in Storage and Input Drive Devices (1959) 239
13. Vizun, Yu. I. Investigation of Problems Related to the Design of Magnetic Input Drive Devices 274

AVAILABLE: Library of Congress (TK7872.M4A35)

Card 4/4

JP/dfk/jw
9-12-61

PHASE I BOOK EXPLANATION

SOV/4893

Vsesoyuznoye nauchnoissledovaniye po fizike, fiziko-khimicheskim svoystvam ferritov i fizicheskim osnovaniyam primeneniya. 3d, Minsk, 1959
Ferrity: fizicheskiye i fiziko-khimicheskiye svoystva. Doklady (Ferrites: Physical and Physicochemical Properties. Reports) Minsk, Izd-vo AN BSSR, 1960. 695 p. Errata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Nauchnyy sovet po magnetizmu AN SSSR. Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR.

Editorial Board: Resp. Ed.: N. N. Sirota, Academician of the Academy of Sciences USSR; E. P. Bort, Professor, Ye. I. Kondor-chenko, M. M. Krasnitskiy, M. M. Krasnitskiy, Ye. I. Kondorchenko, G. A. Solovnik, Professor; E. M. Shol'ts, Candidate of Physical and Mathematical Sciences; E. N. Smolyarenko; and L. A. Mashkurov, Ed. of Publishing House; S. Khol'yavskiy; Tech. Ed.: I. Volokhanovich.

FOREWORD: This book is intended for physicists, physical chemists, radio electronics engineers and technical personnel engaged in the production and use of ferromagnetic materials. It may also be used by students in advanced courses in radio electronics, physics, and physical chemistry.

CONTENTS: The book contains reports presented at the Third All-Union Conference on Ferrites held in Minsk, Belorussian SSR. Reports deal with magnetic transformations, electrical and galvanomagnetic properties of ferrites, studies of the growth of ferrite films, problems in the chemical and physical-chemical analysis of ferrites, properties of the growth of rectangular hysteresis loops and, hysteresis loops in ferrite systems exhibiting spontaneous rectangularity, magnetic resonance attraction, highly coercive ferrites, magnetic properties of ferromagnetic resonance, magneto-optical, physical principles of using ferrite components in electrical circuits, microscopy of electrical and magnetic properties, etc. The Committee on Magnetism, AN USSR (S. V. Vonsovskiy, Chairman) organized the conference. References accompany individual chapters.

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Ferrites (Cont.)

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BARDIZH, V.V.; BEREZHNOY, Ye.F.; MOKHEL', L.L.; SMETANINA, V.M.

[Static and pulse characteristics of miniature cores with rectangular hysteresis loop] Staticheskie i impul'snye svoistva mikronnykh serdechnikov s priamougol'noi petlei gisteriza. Moskva, ITM i VT AN SSSR, 1961. 60 p.

(MIRA 15:9)

(Cores (Electricity))
(Electronic calculating machines)

BARDIZH, V.V.

[Methods for measuring the static and impulse properties of ferrate cores with rectangular hysteresis loops] Statische i impul'snye svoistva ferritovykh serdechnikov s priamougol'noi petlei gisterezisa i sposoby ikh izmerenii. Moskva, In-t tochnoi mekhaniki i vychislitel'noi tekhniki. Akad. nauk SSSR, 1961. 62 p. (MIRA 14:8)
(Ferrates) (Cores(Electricity))

S/721/61/000/000/001/006

AUTHOR: Bardizh, V. V.

TITLE: Static and impulse properties of ferrite cores with a rectangular hysteresis loop and methods for their measurement.

SOURCE: Akademiya nauk SSSR. Institut tochnoy mekhaniki i vychislitel'noy tekhniki. Magnitnyye elementy ustroystva vychislitel'noy tekhniki, sbornik statey. Moscow, 1961, 3-30.

TEXT: The paper presents a theoretical analysis and reports the results of an experimentation at the ITMiVT (Institute of Precision Mechanics and Computer Engineering), AS USSR, relative to the static and impulse (dynamic) properties of ferrite cores having a rectangular hysteresis loop (RHL) and their use in computer equipment. A core is regarded as a system of thin cylindrical layers, each of which undergoes magnetic polarity reversal (MPR) and each of which has its own hysteresis loop (HL). If each static HL has the shape of a parallelogram with vertical rises and descents, then it follows for the layerwise polarity reversal of the core that its resulting HL is also a parallelogram, but with sides that are parallel neither to the x- nor to the y-axis. The differential magnetic permeability in the "saturation" zone for the core has a somewhat higher value than for the individual

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layers, whereas the coercive force is somewhat lower for the core than for the layer. These differences are small and may be disregarded in practical calculations. Fundamental static core properties of significance for computer design: Coercive force, residual induction, and the generalized static rectangularity coefficient. The impulse properties of cores with RHL should be determined with reference to two types of application: (1) For memory-circuit cores; (2) for switching-circuit cores. In the first instance, breakdown pulses, both for the "0" state and for the "1" state, with an amplitude slightly exceeding one-half the amplitude of the read-out pulses, should be provided for. A single (sufficiently prolonged) impulse may be employed for the breakdown of each state of the core in lieu of a series of pulses. The idealized static HL of the core serves in the construction of idealized curves that characterize the relationship of the breakdown of the "1" and that of the "0" state for varying current amplitude of the impulse program intended for the investigation of memory-circuit cores. Relationships for characteristic points of these curves are provided. For the switching-circuit cores, equations are provided for the dependence of the useful signal of the "1" and the noise signal (during "0" reading) on the amplitude of the readout field. It is shown analytically that the useful-signal curve differs from the polarity-reversal curve only by a coefficient of proportionality. The ferrite cores with RHL of the type VT developed at the Institute, having a coercive force from 0.15 to 4 ϕ , can be employed both in the

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switching and in the memory circuits of computers. The VT5 ferrite cores are suitable particularly for ferrite transistor cells, the VT2 for ferrite diode elements, and the VT1, VT7, and VT6 for memory circuitry. Cores of the type VT6, which have an elevated coercive force (4ϕ), can serve in magnetic operative memory equipment that work according to the principle of two coincident currents with a reversal time of 1μ sec. If the reversal frequency is 1 mcps , it is necessary to provide for the removal of the heat released within the cores as a result of losses. There are 26 figures, 9 tables, and 5 references (4 Russian-language Soviet and 1 English-language: Roberts, R. W., Van Nice, R. J., Trans AIEE, v. 74, part I, 1955). The participation of T. A. Korotkova, A. V. Orlov, and V. P. Tarabantov in the experimental part of this work is acknowledged.

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S/721/61/000/000/002/006

AUTHORS: Bardizh, V. V., Berezhnoy, Ye. F., Mokhel', L. L., Smetanina, V. M.

TITLE: Static and impulse properties of micron cores with a rectangular hysteresis loop.

SOURCE: Akademiya nauk SSSR. Institut tochnoy mekhaniki i vychislitel'noy tekhniki. Magnitnyye elementy ustroystv vychislitel'noy tekhniki; sbornik statey. Moscow, 1961, 31-55.

TEXT: The paper describes the static and impulse properties of the so-called micron cores (MC), that is, small magnetic strip cores, made of 2-10 μ thick rolled alloy having a rectangular hysteresis loop (RHL). Such MC serve primarily in switching circuits, such as logical elements, decoders, trigger circuits, etc., in which the cores are subjected to magnetic reversal pulses which create magnetic fields that exceed the static coercive force by several times. MC are more temperature-stable and are magnetically more effective than ferrite cores. The thin and highly T-stable MC permit a more elevated maximal polarity-reversal frequency than ferrite cores. The paper reports experimental work performed at the IPMiVT (Institute of Precision Mechanics & Computer Engineering), AS USSR, in the development of both manufacturing and measuring equipment for the making and study of

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MC having the following dimensions: Thickness 2, 3, 5, and 10 μ ; strip width 1.25, 2.5, 5, 10, and 15 mm; IDiam 2.6, 3, 5, and 8 mm; number of strip coils 10, 25, 50, and 100. The alloys 79HM (79NM), 79HMA (79NMA), 34HKMII (34NKMP), and 50HII (50NP) developed by the Institute of Precision Alloys of the TsNIChM (Central Scientific Research Institute of Ferrous Metallurgy) were employed. Cores made of the alloys 79NM and 79NMA exhibit similar static and impulse parameters which, with 2- and 3- μ thickness, are fairly good. A 5- μ thick core exhibits substantial deviations from the RHL. 2- and 3- μ cores of 79NM have the lowest value of the remagnetization constant (0.3 and 0.4 $\phi \cdot \mu\text{sec}$). Cores made of 79NM strip 3 μ thick operate with no appreciable changes in output signal up to 600-700 kcps of the sequence of polarity-reversal-current impulses in fields exceeding 10 times the coercive force. For 2- μ strip the respective frequency attains up to 800 kcps. Comparable frequency for ferrite cores: 300 kcps. Optimal static RHL is exhibited by 34NKMP cores, with a mean rectangularity coefficient for 5- μ strip cores: 0.96, 10- μ strip cores: 0.98, in a maximal field exceeding 5 times the coercive force. The less favorable impulse properties of cores made of the 34NKMP alloy and the 50NP alloy are discussed in detail. The use of MC made of the alloys 79NM (or 79NMA) with a strip thickness of 3 μ and less is recommended for remagnetization frequencies of several hundreds of kcps and of the alloy 34NKMP 5 and 10 μ thick for remagnetization frequencies of the order of tens of

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kcps. There are 46 figures, 7 tables, and 6 references (3 Russian-language Soviet, 1 German, and 2 English-language). The participation of a great number of staff members of the Special Engineering Bureau of Computer Engineering of the ITMiVT is acknowledged.

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BARDIZH, V.V. (Moskva)

Analysis of static and pulse parameters of ferrite cores with rectangular hysteresis loops. Avtom. i telem. 24 no.11:1551-1564 N '63.

(MIRA 16:12)

L 52037-65 EWT(d)/EWT(m)/EWA(d)/EWP(t)/EWP(x)/EED-2/EWP(z)/EWP(b)/EWA(c)
Pq-4/Pf-4/Pg-4/Pk-4 IJP(c) BB/MJW/JD/HW/GG/GS
ACCESSION NR: AT5011608 UR/0000/64/000/000/0299/0303

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AUTHOR: Bardizh, V. V.; Berezhnoy, Ye. F.; Mokhel', L. L.; Smetanina, V. M. BT/

TITLE: Tape cores for the logical elements of digital computers

SOURCE: ¹⁶⁶ Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki. Lvov, 1962. Magnitnyye elementy avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki (Magnetic elements of automatic control, remote control, measurement and computer engineering); trudy soveshchaniya. Kiev, Naukova dumka, 1964, 299-303

TOPIC TAGS: tape core, logical element, digital computer element, thermostable magnetic core, magnetic memory

ABSTRACT: A group of logical magneto-triode elements utilizing cores made of superthin tapes and P15 and P601 triodes has been developed at the Institut tochnoy mekhaniki i vychislitel'noy tekhniki (Institute of Fine Mechanics and Computer Technology). These logical elements operate at a frequency of 300 kcps in the -40 to +60C temperature range. They permit collector and base voltage changes of ±25% (Ye. F. Berezhnoy, V. G. Mikhalev, L. L. Mokhel', V. I. Perekatov, Magnitnotriodnyye logicheskiye elementy s ispol'zovaniyem serdechnikov iz permalloyevoy lenty, Magnitnyye elementy avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy

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tekhniki, Trudy soveshchaniya, Kiev, Naukova dumka, 1964, pp. 568-579). The present work describes the production technology in brief and gives the basic characteristics of cores used in the above-mentioned elements. They are made of 79NM alloy, and the tape thickness is equal to 3μ ; the coercive force of the alloy is approx. 0.15 Oe, the residual magnetism about 7000 Gauss, the average value of the differential magnetic permeability is 690 Gauss/Oe; the generalized static rectangularity coefficient is 10 Oe, and the static rectangularity coefficient is 93%. The diameter of the core is 2 mm; tape width 1 mm, number of turns 10 or 40; the cross section of the core with 10 turns is $3 \cdot 10^{-4} \text{ cm}^2$ with an associated magnetic flux of about 2 Maxwell; cores with 40 turns have a cross section of $12 \cdot 10^{-4} \text{ cm}^2$ with a flux of about 8 Maxwell. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: None

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ACC NR: AT6002979

SOURCE CODE: UR/0000/65/000/000/0005/0023

AUTHOR: Bardlzh, V. V.

ORG: none

TITLE: Magnetic storage devices 166

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki i vychislitel'noy tekhniki. 9th, Yerevan, 1963. Magnitnyye tsifrovyye elementy (Magnetic digital elements); doklady soveshchaniya. Moscow, Izd-vo Nauka, 1965, 5-23

TOPIC TAGS: computer, computer storage, magnetic core storage, information storage and retrieval

ABSTRACT: Based on 1956-63 Soviet and 1955-63 Western published sources, this review covers the following topics: Ring ferrite cores for computer internal storages (x, y-system of coincident currents; z-system with random access; higher-speed storages with access times under 1 μ sec; reduction of consumption by miniaturization of cores); Compound-shape ferrite cores (multihole micromodules, transfluxor,

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diametric-hole core, biax core, microferrites); Ferromagnetic films (their operation, characteristics, and designs). Most information is drawn from US sources. These conclusions are offered: (1) Ferrite-ring cores have been used in nearly all modern digital computers; (2) Compound ferrite cores, particularly the biax type, seem promising for the near future; (3) Nonvolatile-readout ferromagnetic-film storage elements seem promising because of their very short transient time. Orig. art. has: 18 figures and 2 formulas.

SUB CODE: 09 / SUBM DATE: 23Apr65 / ORIG REF: 016 / OTH REF: 026

Card 2/2 *MLP*