BELYANKIN, F.P. [Bieliankin, F.P.]; YATSENKO, V.F.

Longitudinal bending of a rod subjected to central compression.
Zbir.prats'. Inst.mekh.AN URSR no.23:92-99 '61.
(MIRA 14:12)

(Elastic rods and wires)

BELYANKIN, F.P. [Bieliankin, F.P.]; YATSENKO, V.F.

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(Deformations(Mechanics))

BELYANKIN, Fedor Pavlovich[Bieliankin, F.P.]; KOVALENKO, A.D., akademik, otv. red.; TRETYAK, O.N., red.; LISOVETS', O.M.[Lysovets', O.M.], tekhn. red.

[Effect of gravitation of the moon and sun on crustal tectonic processes]Tektonichni protsesy v zemnii kori pid gravitatsiinym vplyvom Misiatsiia ta Sontsia. Kyiv, Vyd-vo Akad. nauk URSR, 1962. 51 p. (MIRA 15:12)

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(Earth--Surface) (Gravitation)

CHERNYAK, Nikolay Il'ich; BELYANKIN, F.P., akademik, otv. red.; NAZARENKO, G.T., nauchnyy red.; YEFIMOVA, M.I., tekhn. red.

[Mechanical properties of steel in the range of small plastic deformations] Mekhanicheskie svoistva stali v oblasti malykh plasticheskikh deformatsii. Kiev, Izd-vo Akad. nauk USSR, 1962. 103 p. (MIRA 15:7)

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(Steel--Testing) (Deformations (Mechanics))

DRAYGOR, David Abramovich; VAL'CHUK, Georgiy Iosifovich; BELYANKIN, F.P., akademik, otv. red.; REMENNIK, T.K., red.izd-va; DAKHNO, Yu.B., tekhn. red.

[Effect of wear on the fatigue strength of steel considering the scale factor]Vliianie iznosa na ustalostnuiu prochnost' stali s uchetom mashtabnogo faktora. Kiev, Izd-vo Akad. nauk USSR, 1962. 110 p. (MIRA 16:4)

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(Steel--Fatigue) (Mechanical wear)

KORNOUKHOV, Nikolay Vasil'yevich, akademik; BELYANKIN, F.P., akademik, otv. red.; STREL'BITSKAYA, A.I., doktor tekhn. nauk; AMIRO, I.Ya., kand. tekhn. nauk, red.; DLUGACH, M.I., kand. tekhn. red.; YEREMENKO, V.S., kand. tekhn. nauk, red.; NIKITIN, Yu.P., kand. tekhn. nauk, red.; PAVLOV, I.G., kand. tekhn. nauk, red.; POLYAKOV, P.S., kand. tekhn. nauk, red.; KIYANITSA-GUSLISTAYA, N.N., mlad. nauchn. sotr., red.; ORLIK, Ye.L., red.; LISOVETS, A.M., tekhn. red.

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BELYANKIN, F.P. [Bieliankin, F.P.] (Kiyev); DYBENKO, G.I. [Dybenko, H.I.] (Kiyev)

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1. Institut mekhaniki AN UkrSSR.

BELYANKIN, F.P.; DYBENKO, G.I.

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[Simple theory for the calculation of rods under an extended load] Prosteishaia teoriia rascheta sterzhnei na prostranstvennuiu nagruzku; uchebnoe posobie dlia studentov. Kuibyshev, Kuibyshevskii inzhenerno-stroitel'nyi in-t im. A.I.Mikoiana, 1963. 54 p. (MIRA 17:7)

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BELYANKIN, F.P. [Bieliankin, F.P.], akademik; KRITSUK, A.A. [Krytsuk, A.A.]

Poisson's coefficient and deformation coefficients of laminated DSP-B plastic. Dop. AN URSR no.12:1596-1599 '63. (MIRA 17:9)

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BELYANKIN, G.P. [Bieliankin, F.P.], akademik; DYBENKO, G.I. [Dybenko, H.I.]

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(Plastics)

BELYANKIN, L.F.; VORONTSOV, V.V.

Short review of the history of the study of lower Mesozoic sediments in the Kenderlyk trough. Trudy Lab.geol.ugl. no.12:177-179 '61. (MIRA 14:8)
(Kenderlyc Valley—Coal geology)

BELYANKIN, L.F.; VORONTSOV, V.V.; VOLKOVA, I.B.

Lithofacies characteristics of lower Mesozoic sediments. Trudy Lab.geol.ugl. no.12:199-207 '61. (MIRA 14:8)
(Kenderlyk Valley--Coal geology)

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Characteristics of lower Mesozoic coal-bearing sediments in the Kenderlyk trough. Trudy Lab.geol.ugl. no.12:235-246 '61. (MIRA 14:8)

(Kenderlyk Valley--Coal geology)

VOLKOVA, I.B.; NALIVKIN, D.V.; SLATVINSKAYA, Ye.A.; BOGOMAZOV, V.M.; GAVRILOVA, O.I.; GUREVICH, A.B.; MUDROV, A.M.; NIKOL'SKIY, V.M.; OSHURKOVA, M.V.; PETRENKO, A.A.; POGREBITSKIY, Ye.O.; RITENBERG, M.I.; BOCHKOVSKIY, F.A.; KIM, N.G.; LUSHCHIKHIN, G.M.; LYUBER, A.A.; MAKEDONTSOV, A.V.; SENDERZON, E.M.; SINITSYN, V.M.; SHORIN, V.P.; BELYANKIN, L.F.; VAL'TS, I.E.; VLASOV, V.M.; ISHINA, T.A.; KONIVETS, V.I.; MARKOVICH, Ye.M.; MOKRINSKIY, V.V.; PROSVIRYAKOVA, Z.P.; RADCHENKO, O.A.; SEMERIKOV, A.A.; FADDEYEVA, Z.I.; BUTOVA, Ye.P.; VERBITSKAYA, Z.I.; DZENS-LITOVSKAYA, O.A.; DUBAR', G.P.; IVANOV, N.V.; KARPOV, N.F.; KOLESNIKOV, Ch.M.; NEFED'YEV, L.P.; POPOV, G.G.; SHTEMPEL', B.M.; KIRYUKOV, V.V.; LAVROV, V.V.; SAL'NIKOV, B.A.; MONAKHOVA, L.P.[deceased]; MURATOV. M.V.; GORSKIY, I.I., glav. red.; GUSEV, A.I., red.; MOLCHANOV, I.I., red.; TYZHNOV, A.V., red.; SHABAROV, N.V., red.; YAVORSKIY, V.I., red.; REYKHERT, L.A., red.izd-va; ZAMARAYEVA, R.A., tekhn. red

[Atlas of maps of coal deposits of the U.S.S.R.]Atlas kart uglenakopleniia na territorii SSSR. Glav. red. I.I.Gorskii. Zam. glav. red. V.V.Mokrinskii. Chleny red. kollegii: F.A.Bochkovskiy i dr. Moskva, Izd-vo Akad. nauk SSSR, 1962. 17 p.
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GLIKI, N.V.; BELYANKIN, N.V., akademik.

"Dew" method as applied to the study of the spiral growth stages. Dokl. AN SSSR 90 no.4:541-543 Je '53. (MLRA 6:5)

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Geological characteristics of lower Mesozoic sediments in the Kenderlyk trough. Trudy Lab.geol.ugl. no.12:188-199 '61. (MIRA 14:8)

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BELYANKIN, L.F.

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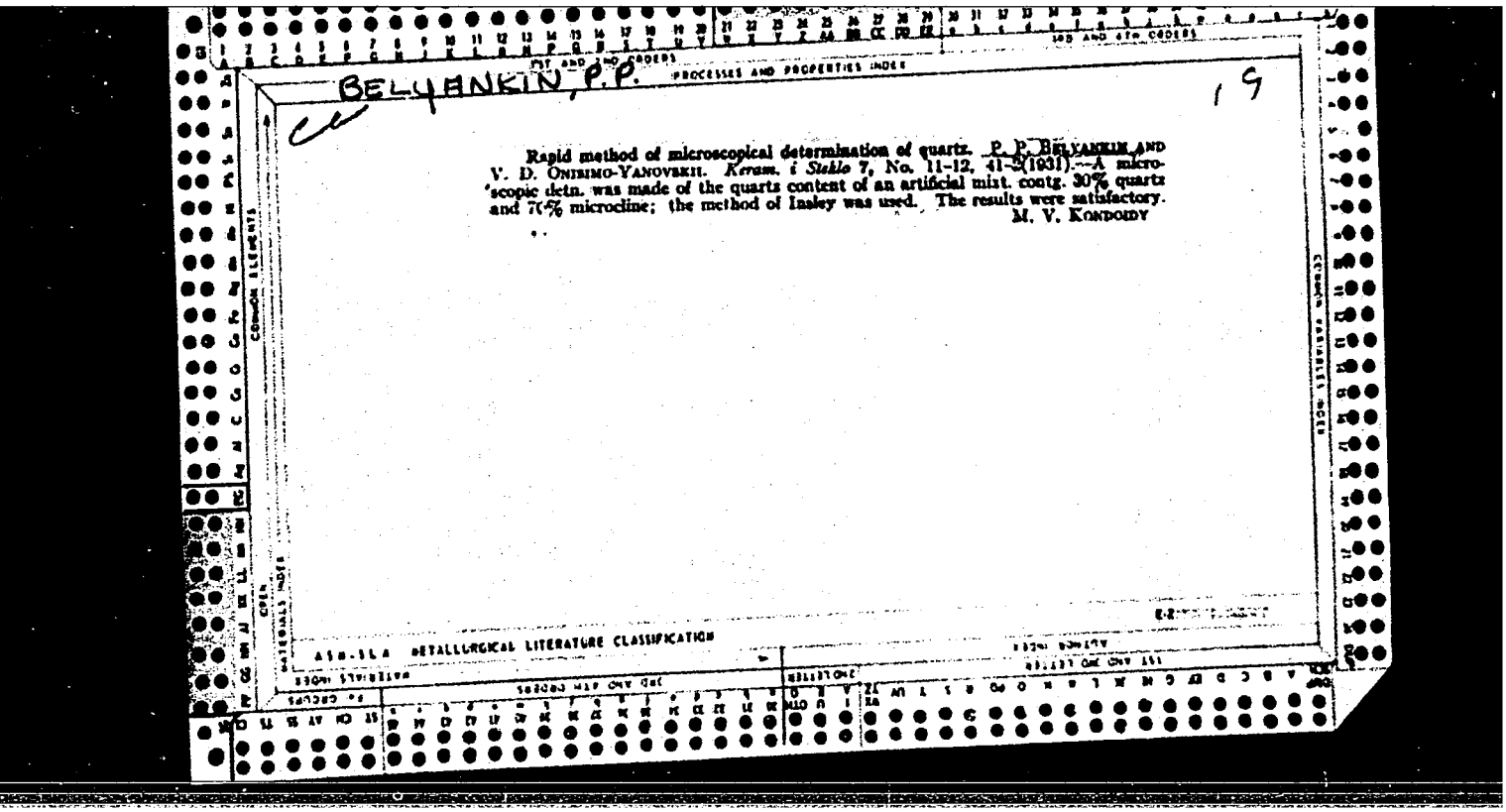
(Kenderlyk Valley—Coal geology)



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19

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M. V. KONDOIDY

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Clover and timothy mixture. Sov. agron. 10 no. 8, 1952

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Sowing corn with other crops for green fodder. Zemledelie 5 no.5:91-92 My '57. (MLRA 10:7)

(Kostroma Province--Corn (Maize))

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So: Knizhnaya Letopis', No. 18, 1956,

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Genesis and the structural position of granites in the northwestern part of the Yenisey Range. Vest. Mosk. un. Ser. 4: Geol. 18 no.6:59-68 N-D '63. (MIRA 18:7)

1. Kafedra diamicheskoy geologii Moskovskogo universiteta.

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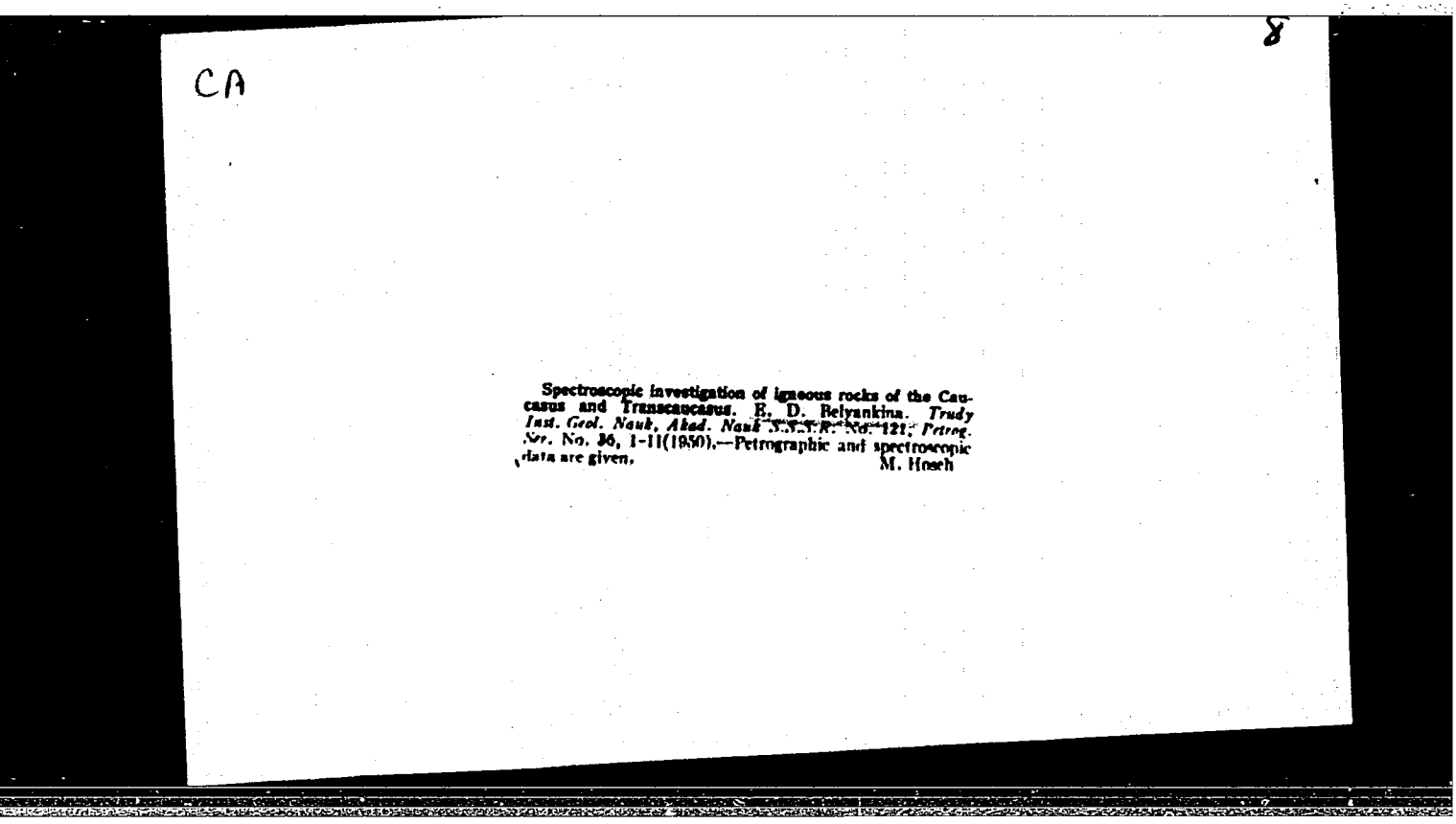
1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

BELYANKINA, Ye. D. Cand Geolog--Mineralog Sci

Dissertation: "Chemicomineralogical Investigation of the Potassium-Sodium Feldspars of Caucasus and Transcaucasia." 8/6/50

Institute of Geological Sciences, Acad. Sci. USSR

SO Vecheryaya Moskva
Sum 71



8

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Spectroscopic investigation of igneous rocks of the Caucasus and Transcaucasus. E. D. Belyankina. *Trudy Inst. Geol. Nauk, Akad. Nauk S.S.S.R.* No. 121; *Petrog. Ser.* No. 36, 1-11(1950).—Petrographic and spectroscopic data are given.
M. Hoch

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USSR

Spectroscopic examination of potassium sodium feldspars. E. D. Belyankina. *Vsesoyuz. Mineral. Obshch., Zapiski* 82, 77–87(1953).—On the isomorphism in the feldspar group from the standpoint of ionic replacement and thermodynamic stability the previous work of Schiebold (*C.A.* 26, 5037) is fundamental. His predictions have been entirely confirmed. Rb, Cs, Li, Ba, Sr, Mn, Pb, Fe, Ga, and Tl are regular accessorial elements. Cu is only exceptionally observed, in very low amts. Mg, however, is observed in all of the samples in higher amts. than Cu, and cannot easily be explained as a contamination. Ba, V, Ni, Cr, and Co are absent, in spite of their distinct presence in the surrounding rocks. A comparison of the feldspars from the Caucasus with those from other occurrences in the U.S.S.R. shows the similarity of the distribution of accessorial elements, independently of the geographic locations. The Caucasian feldspars, however, contain equal amts. of Sr and Ba, or even more Sr, while for the other feldspars these are reversed, as a norm. The alkali elements appear in the following concns.: Rb from 0.01 to 0.019; Cs from 0 to 0.02; Li from 0.0004 to 0.0100; all these elements are enriched in K feldspars. Amazonites have higher amts. of Rb and Cs, but also of Ga, Be, and Pb, but less of Sr, Ba, Ca, Mg, and Tl than the other types. W. Eitel

BELYANKINA, YE. D.

"Chemical Mineralogical Investigation of Potassium-Sodium Feldspars of the Caucasus"
Tr. In-ta Geol. Nauk AN SSSR, No 147, Petrografich. Seriya, 1953, No 43, 185-222

In all the specimens of potassium-sodium feldspars analyzed the author established the following contents; SrO, 0.09-0.13%, and MgO, 0.10-0.72%. The assayed purity of the material forces one to assume the presence of magnesium in the lattice of the feldspar. (RZhGeol, No 3, 1954)

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Morphology of muscovite in pegmatite veins. Trudy Inst.geol.nauk. no.165:71-77 '55. (MLRA 9:4)
(Muscovite) (Pegmatites)

BELYANKINA, Ye.D.; GUR'YEVA, E.Ya.; IGNATOVA, M.D.; PETROV, V.P.; TOLSTIKHINA, K.I.; AFANAS'YEV, G.D., glavnyy red.; ZALESSKIY, B.V., kand.geol.-min.nauk, otv.red.; MAKUNI, Ye.V., tekhn.red.

[Genesis and types of commercial muscovite] Genezis i tipizatsii promyshlennogo muskovita. Moskva, Izd-vo Akad.nauk SSSR, 1958. 152p. (Akademiia nauk SSSR. Institut geologii rudnykh mestorozhdenii, petrografii, mineralogii i geokhimii. Trudy no.12) (MIRA 11:12)

(Muscovite)

KULESHOV, G.F.; BELYANKINA, Ye.D.; PETROV, V.P.

Slyudyanogorsk muscovite deposit. Trudy IGEM no.48:27-39 '61. (MIRA 15:1)

(Chelyabinsk Province--Muscovite)

BELYANKINA, Ye.D.

Mineralogy of Yena pegmatite veins. Trudy IGEM no.48:40-46 '61.
(MIRA 15:1)

(Kola Peninsula—Pegmatites)

SEREBRYANIKOV, N.I., inzh.; BELYANKINA, Z.P.

Preventing salt depositions on the blading of a VK-100-2 turbine operating in a unit with once-through boilers. Teploenergetika 8 no.12:63-66 D '61. (MIRA 14:12)

1. Shchekinskaya Gosudarstvennaya rayonnaya elektrostantsiya.
(Steam turbines) (Feed water purification)

SAMONOV, D.V., inzh.; BELYANKO, I.N., inzh.

End feeler for the UDM-1M ultrasonic defectoscope. Mashinostroenie no.5:89-90 S-O '65. (MIRA 18:9)

BELYANOVA, M. I.

BELYANOVA, M. I. -- "Natural Flora and Vegetation of Khimkinskiy Rayon of Moskovskaya Oblast." Sub 8 May 52, Moscow Oblast Pedagogocal Inst (Dissertation for the Degree of Candidate in Biological Sciences).

SO: Vechernaya Moskva January-December 1952

NIKIFOROV, A.G., otvetstvennyy redaktor; POLYAKOV, K.V., professor, redaktor; ALEKSANDROVA, T.A., dotsent, redaktor; PETROVA, K.I., redaktor; BELYANOVA, Ye., redaktor; TERESHOV, A., redaktor; VYSHKOVSKIY, D., tekhnicheskiy redaktor

[Natural resources of Kuybyshev Province] Priroda Kuibyshevskoi oblasti. [Kuibyshev] Kuibyshevskoe obl. gos. izd-vo, 1951. 404 p. (Kuybyshev Province--Geography) (MLRA 9:8)

FEDOROV, N.A.; BELYANOVA, Ye.M.; GRIDNEVA, K.I.; RAKOVSKIY, V.Ye.; KUNIN, A.V.; YAKOBI, N.S.

Composition and ways of using the liquid products of underground gasification of coals. Nauch. trudy VNIIPodzemgaza no.8:95-103 '62. (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut podzemnoy gazifikatsii ugley, Kalininskiy torfyanoy institut i Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya.

(Coal gasification, Underground--By-products)

BELYANOVA, Ye.M., BEZRUKOV, A.I.

Determining the calorific capacity of underground coal gasification gas by the method of measuring the heat conductivity of the gas mixture. Podzem.gaz.ugl. no.1:67-70 '58. (MIRA 11:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy i proyektnyy institut podzemnoy gazifikatsii ugley.
(Calorimetry) (Heat--Conduction)

BELYANOVA, Ye.M.; ANTIPOVA, N.G.

Automatic system for relaying gas and blow media parameter measurements to a centralized point in underground coal gasification areas. Podzem. gaz. ugl. no.4:51-55 '58. (MIRA 11:12)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut Podzemgaz.
(Coal gasification, Underground--Testing)
(Remote control)

BELYANOVA, Ye.M.; CHEKANOV, A.A.

Device for measuring the moisture content of gas produced underground coal gasification. Podzem.gaz.ugl. no.2:62-64 '59.
(MIRA 12:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy i proyektnyy institut podzemnoy gazifikatsii ugley.
(Coal gasification, Underground) (Gas--Testing)

PETRENKO, I.G.; BELYANOVA, Ye.M.

Method of studying the gas flow in an underground gas producer with the aid of radioactive isotopes. Trudy IGI 13:144-152 '60. (MIRA 14:5)

(Gas flow) (Gas producers)

BELYANOVA, Ye.M.

PHASE I BOOK EXPLOITATION SOV/5592

Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheniy v narodnom khozyaystve SSSR. Riga, 1960.

Radioaktivnyye izotopy i yadernyye izlucheniya v narodnom khozyaystve SSSR; trudy Vsesoyuznogo soveshchaniya 12 - 16 aprelya 1960 g. g. Riga, v 4 tomakh. t. 4: Poiski, razvedka i razrabotka poleznykh iskopayemykh (Radioactive Isotopes and Nuclear Radiation in the National Economy of the USSR; Transactions on the Symposium Held in Riga, April 12 - 16, 1960; in 4 volumes. v. 4: Prospecting, Surveying, and Mining of Mineral Deposits) Moscow, Gostoptekhizdat, 1961. 284 p. 3,640 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR. Gosudarstvennyy komitet Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii

Eds. (Title page): N. A. Petrov, L. I. Petrenko, and P. S. Savitskiy; ed. of this volume: M. A. Speranskiy; Scientific ed.: M. A. Speranskiy; Executive Eds.: N. N. Kuz'mina and A. G. Ionel';

Card 1/11

Radioactive Isotopes and Nuclear (Cont.) SOV/5592

Tech. Ed.: A. S. Polosina.

PURPOSE : The book is intended for engineers and technicians dealing with the problems involved in the application of radioactive isotopes and nuclear radiation.

COVERAGE: This collection of 39 articles is Vol. 4 of the Transactions of the All-Union Conference of the Introduction of Radioactive Isotopes and Nuclear Reactions in the National Economy of the USSR. The Conference was called by the Gosudarstvennyy nauchno-tekhnicheskiy komitet Sovet Ministrov SSSR (State Scientific-Technical Committee of the Council of Ministers of the USSR), Academy of Sciences USSR, Gosplan SSSR (State Planning Committee of the Council of Ministers of the USSR), Gosudarstvennyy komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee of the Council of Ministers of the USSR for Automation and Machine Building), and the Council of Ministers of the Latvian SSR. The reports summarized in this publication deal with the advantages, prospects, and

Card 2/11

Radioactive Isotopes and Nuclear (Cont.) SOV/5592

development of radioactive methods used in prospecting, surveying, and mining of ores. Individual reports present the results of the latest scientific research on the development and improvement of the theory, methodology, and technology of radiometric investigations. Application of radioactive methods in the field of engineering geology, hydrology, and the control of ore enrichment processes is analyzed. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

BELYANOVA, Ye.M.

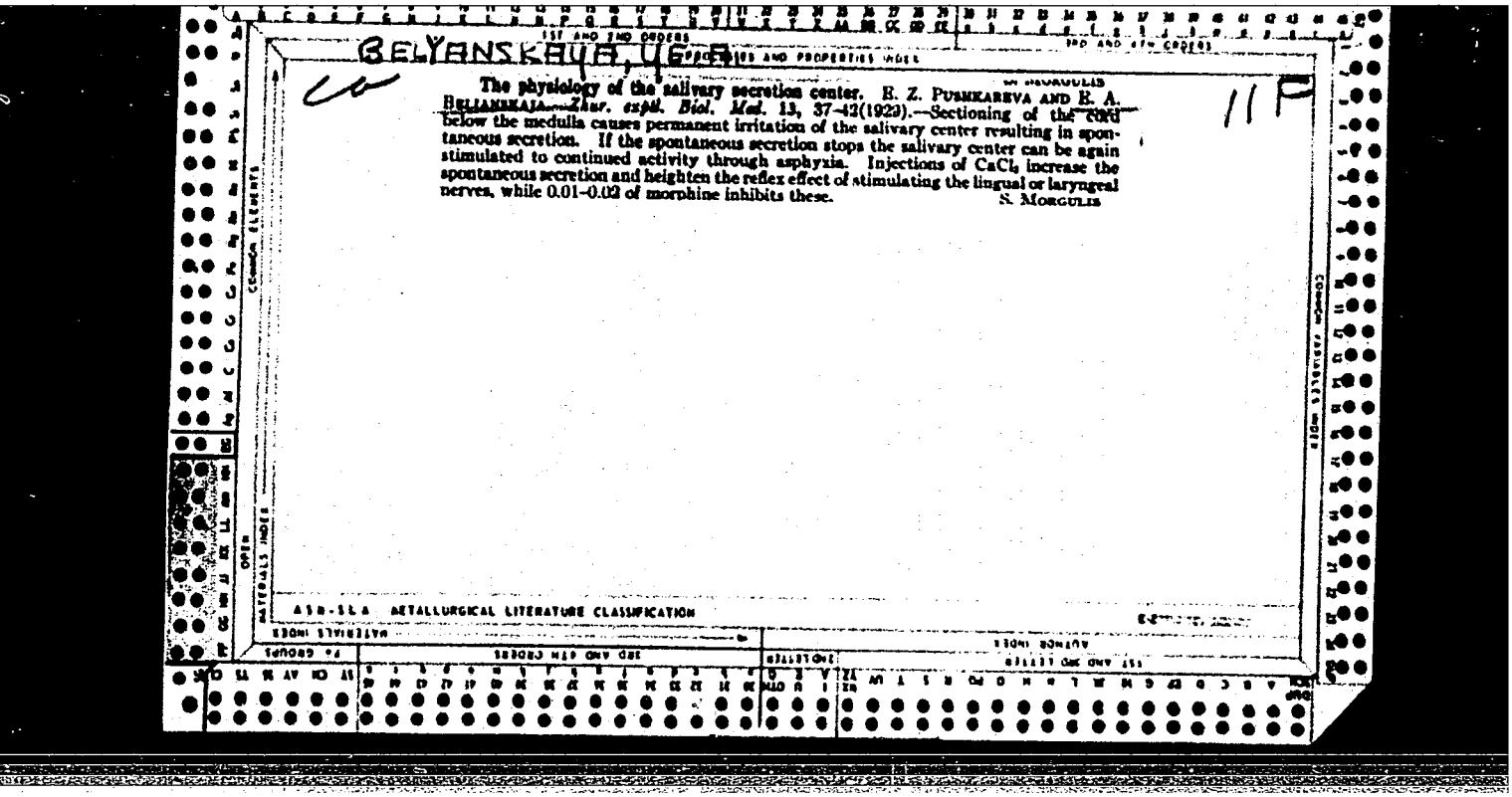
New control devices for underground gasification of coal. Nauch. trudy VNIIPodzemgaza no.9:98-102 '63. (MIRA 16:11)

1. Laboratoriya avtomatiki i telemekhaniki Vsesoyuznogo nauchno-issledovatel'skogo instituta podzemnoy gazifikatsii ugley.

BELYANSKAYA, Anna Grigor'yevna, ptichnitsa; VASIL'YEVA, Ye., red.; PAVLOVA, S., tekhn.red.

[Twenty-five years on poultry farms] 25 let na ptitseferme. Moskva, Mosk. rabochii, 1961. 19 p. (MIRA 14:12)

1. Sovkhoz "Gorki-II" Zvenigorodskogo rayona (for Belyanskaya).
(Poultry breeding)



VITUKHNOVSKAYA, M.S.; BELYANSKAYA, Ye.A.

Use of reductants for the regeneration of spent sulfuric acid.
Zhur. prikl. khim. 33 no.11:2427-2434 N '60. (MIRA 14:4)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.
(Sulfuric acid)

L 16915-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(j)/EWP(t)/EWP(b) Po-4/Pr-4/
Pad/Ps-4/Pu-4 IJP(c) JD/HW/JG/RM

ACCESSION NR: AP4047537 S/0195/64/005/005/0849/0860

AUTHOR: Belyanski, A.; Deren', G.; Vol'ter, M.

TITLE: Investigation into the properties of pure and lithium- or iron-alloyed nickel oxide, obtained by the decomposition of nitrates

SOURCE: Kinetika i kataliz, v. 5, no. 5, 1964, 849-860

TOPIC TAGS: catalyst property, surface phenomenon, nickel oxide lattice, lithium diffusion, iron diffusion, nickel oxide conductivity

ABSTRACT: A brief review is given of a fairly large number of papers, mostly published in recent years, dealing with the study of the effect which the alloying of nickel oxide has on its adsorption and catalytic properties. Included in this review are also former studies by the present authors which provide a more complete description of methodology than the rather brief statement in the article under consideration. The authors do state, however, that the technique used makes it possible to follow the penetration of lithium oxide into the lattice of the product of the decomposition of the basic nickel carbonate, depending on such factors as the duration and temperature of calcination of the sample, as well as the quantity of lithium oxide employed. The purpose of the present article was to expand pre-

Card 1/2

L 16915-65

ACCESSION NR: AP4047837

viously initiated investigations into the physicochemical properties of pure and alloyed nickel oxide, and also to generalize certain formerly advanced conclusions. By calcining nickel nitrate at temperatures of 500 - 1100C, nickel oxide samples were prepared: both pure and alloyed with lithium (0.17 - 5.5 at.%) and iron (0.1 - 3.0 at.%). The content of excess oxygen in these samples was determined both immediately after air calcination and after vacuum desorption of the oxygen at 400C. The authors thus established the quantity of desorbed oxygen present on the surface or in the near-surface layer, and the quantity of intracrystalline excess oxygen. On the basis of the results obtained it was possible to form an effective idea of the lithium diffusion into the nickel oxide lattice. The article also presents the results of investigations into the electrical conductivity of the samples, both in air and in a vacuum. Orig. art. has: 3 tables, 8 figures and 3 equations.

ASSOCIATION: Laboratoriya poverkhnostny*kh yavleniy, Institut fizicheskoy khimii Pol'skoy Akademii Nauk, Cracow, Poland (Surface Phenomena Laboratory, Institute of Physical Chemistry of the Polish Academy of Sciences)

SUBMITTED: 06May63 ENCL: 00 SUB CODE: MM, IC

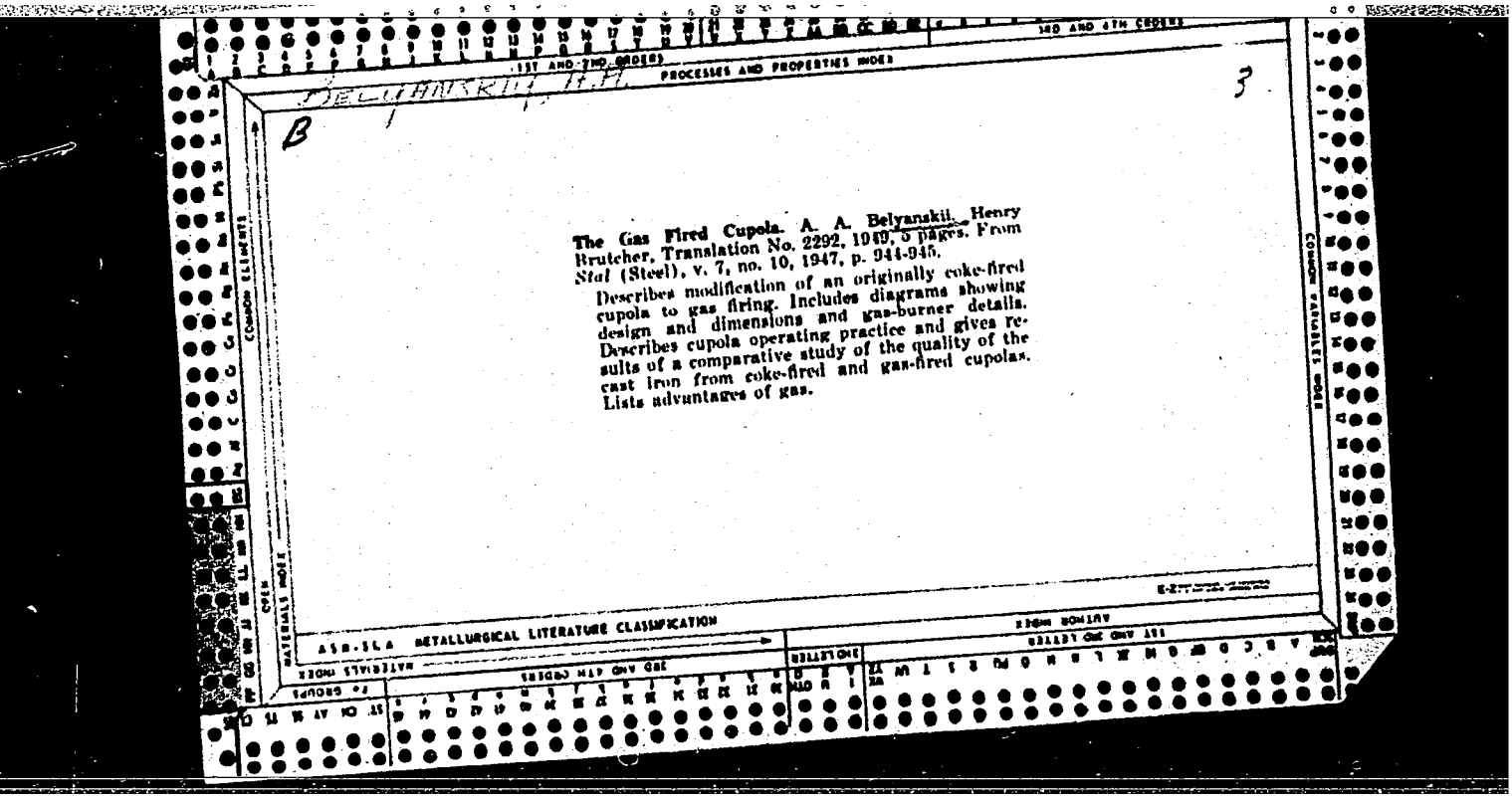
NO REF SOV: 002 OTHER: 012

Card 2/2

BELYANSKIY, Adam; DEREN', Georgiy; GABER, Georgiy

Electric conductivity of semiconductor catalysts. Probl. kin. i kat. 10:37-49 '60. (MIRA 14:5)

1. Gorno-metallurgicheskaya akademiya, Krakov.
(Semiconductors) (Catalysts)

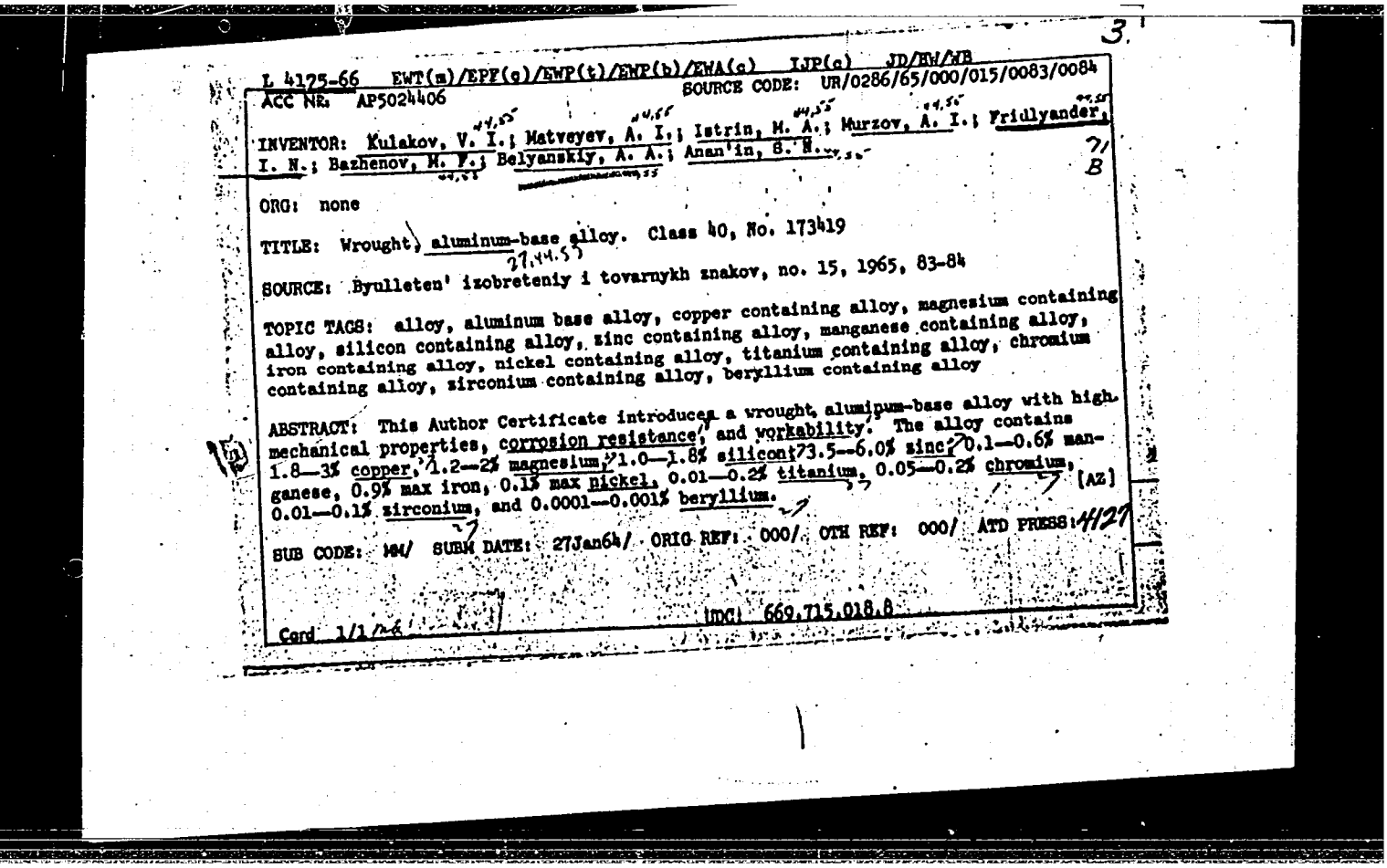


B

3

The Gas Fired Cupola. A. A. Belyanskii. Henry Brutcher, Translation No. 2292, 1949, 5 pages. From *Stal* (Steel), v. 7, no. 10, 1947, p. 944-945.

Describes modification of an originally coke-fired cupola to gas firing. Includes diagrams showing design and dimensions and gas-burner details. Describes cupola operating practice and gives results of a comparative study of the quality of the cast iron from coke-fired and gas-fired cupolas. Lists advantages of gas.



L 4125-66 EWT(m)/EPF(c)/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/EW/WB
ACC NR: AP5024406 SOURCE CODE: UR/0286/65/000/015/0083/0084

INVENTOR: Kulakov, V. I.; Matveyev, A. I.; Istrin, M. A.; Murzov, A. I.; Fridlyander, I. N.; Bazhenov, M. F.; Belyanskiy, A. A.; Anan'in, B. N.

ORG: none

TITLE: Wrought aluminum-base alloy. Class 40, No. 173419

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 15, 1965, 83-84

TOPIC TAGS: alloy, aluminum base alloy, copper containing alloy, magnesium containing alloy, silicon containing alloy, zinc containing alloy, manganese containing alloy, iron containing alloy, nickel containing alloy, titanium containing alloy, chromium containing alloy, zirconium containing alloy, beryllium containing alloy

ABSTRACT: This Author Certificate introduces a wrought aluminum-base alloy with high mechanical properties, corrosion resistance, and workability. The alloy contains 1.8—3% copper, 1.2—2% magnesium, 1.0—1.8% silicon, 3.5—6.0% zinc, 0.1—0.6% manganese, 0.9% max iron, 0.1% max nickel, 0.01—0.2% titanium, 0.05—0.2% chromium, 0.01—0.1% zirconium, and 0.0001—0.001% beryllium. [AZ]

SUB CODE: MM/ SUBM DATE: 27Jan64/ ORIG REF: 000/ OTH REF: 000/ ATD PRESS: 4127

Card 1/1 UDC: 669.715.018.8

KASATKIN, A.G.; LEMAYE, V.M.; YELKIN, L.N.; Prinimali uchastiye: BELYANSKIY, A.Z., laborant; AZAROV, Ya.I., mekhanik

Continuous thermal method of treating sulfur ores. Trudy MIGHTI no.35:82-100 '61. (MIRA 14:10)
(Sulfur)
(Ore dressing)

BELYANSKIY, B.; MALOFEYEV, G.

Payments for agricultural machinery. Fin. SSSR 23 no.4:43-44 Ap '62. (MIRA 15:4)
(Rostov--Agricultural machinery industry--Finance)
(Payment)

BELYANSKIY, I.M., inzhener; KAN, M.I., inzhener.

Using smooth measuring wires in checkrow planting and sowing.
Sel'khozmashina No.4:9-11 Ap '56. (MLRA 9:7)

1.Zavod Belinksel'mash.
(Panters (Agricultural machinery))

KHAZANOV, I.S.; KUCHERUK, V.V.; BELYANSKIY, P.P.; BELYY, B.D., inzhener, retsenzent; KUGINIS, B.L., inzhener, retsenzent; VINOGRADSKIY, N.V., dotsent, redaktor; MATVEYEVA, Ye.N., tekhnicheskiy redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor

[Operation and repair of ventilation equipment in machinery factories] Ekspluatatsiia i remont ventiliatsionnykh ustanovok mashinostroitel'nykh zavodov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroitel'noi lit-ry, 1954. 203 p. (MLRA 8:4)
(Factories--Heating and ventilation)

BELYANSKIY, V. A.

Belyanskiy, V. A. "On the antagonistic innervation of septa; large and small emboli of the kidney," Trudy Kuybyshevsk. gos. med. in-ta, Vol. I, 1948, p. 191-206

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

USSR/Human and Animal Morphology - Normal and Pathological. S
Circulatory System.

Abs Jour : Ref Zhur Biol., No 11, 1958, 50278

Author : Belyanskiy, V.A.

Inst : Kuybyshev Association of Anatomopathologists with a Section of Pathophysiology

Title : Blood Supply of the Renal Veins in Man

Orig Pub : Sb. nauchn. rabot Kuybyshevsk. o-va patologoanatomov s sektsiyey patofiziol. Kuybyshev, 1957, 170-178

Abstract : A study of the blood vessels of the renal veins (RV) was conducted by the method of staining the vessels of the cadaver with subsequent dissection of RV, and macromicroscopic investigation of whole clarified preparations. The sources of blood supply in RV are the same vessels which supply the walls of the hollow vein (at the level where

Card 1/2

L 39557-66 EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) JD/GD
ACC NR: AP6008780 SOURCE CODE: UR/0115/66/000/001/0057/0061

AUTHOR: Orlova, M. P.; Kats, G. A.; Astrov, D. N.; Belyanskiy, L. B.; Shibayeva, O. A.; Shubin, V. E.

ORG: none

TITLE: Alloyed germanium for low-temperature thermometry

SOURCE: Izmeritel'naya tekhnika, no. 1, 1966, 57-61

TOPIC TAGS: thermometry, germanium alloy, thermometer

ABSTRACT: The results are reported of an experimental investigation of the galvanomagnetic properties of Ge doped with various amounts of Sb; As; In; Ga; the Ge properties were studied in a range of temperatures from room to liquid helium in order to find out the best impurity and its concentration suitable for low-temperature thermometers. Most measurements were made with Sb-doped Ge

Card 1/2 UDC: 546.289.001.5:536.531

L 39557-66
ACC NR: AP6008780

whose Nd was $4.6 \times 10^{16} < Nd < 1 \times 10^{17}$ per cm^3 ; the resistivity was found to be 0.00042—0.00046 ohm·m at 20—4.2K; acceptor-impurity concentration, $Na < 0.1$ Nd. A few thermometers were made from Sb-doped Ge (Nd = 5×10^{16} per cm^3, K = 6%) for the 40—4.2K range; their resistivity was 0.025—0.027 ohm·m at boiling-helium temperature. The relation lg ρ (1/T) was satisfactory for these thermometers only under 7K. A relatively high value of magnetoresistance of doped Ge is noted. Orig. art. has: 4 figures, 4 formulas, and 4 tables.

SUB CODE: 20, 09 / SUBM DATE: none / ORIG REF: 003 / OTH REF: 016

Card 2/2 HS

L 33424-66 EWT(l)/EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6013529 SOURCE CODE: UR/0120/66/000/002/0226/0227

50
B

AUTHOR: Astrov, D.N.; Belyanskiy, L.B.

ORG: VNII Physico-Technical and Radio Engineering Measurements, Kryukovo (VNII fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy)

TITLE: High vacuum seal for low temperatures

SOURCE: Pribory i tekhnika eksperimenta, no. 2, 1966, 226-227

TOPIC TAGS: ~~gasket, seal~~, vacuum seal, cryogenic seal, ~~teflon (Ftoroplast-4 gasket~~ LOW TEMPERATURE

ABSTRACT: A high vacuum cryogenic seal is described, motivated by the need to improve upon existing designs requiring expensive materials and frequent gasket replacements. In Fig. 1, showing a schematic of the seal, 1 and 2 are the bronze flanges, pressing upon flat, thin (.1 - .15 mm) Ftoroplast-4 (teflon) gasket 3. Radial clearances between flanges are kept small, under .05 mm, to prevent gasket extrusion. Low vacuum (10^{-5} - 10^{-6} torr) operation over room to 1.5°K temperature range was conducted with satisfactory results explained by the gasket thinness. Seal needs no tightening for at least 10 cooling cycles. Orig. art. has 1 figure.

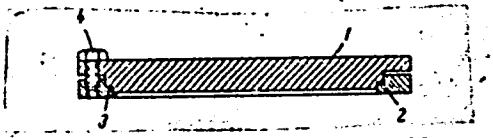


Fig. 1. Schematic of high vacuum seal design

SUB CODE: 11, 20/ SUBM DATE: 25Mar65/ ORIG REF: 001/ OTH REF: 001

Card 1/1 UCR

UDC: 621.527.2:621.59

BELYANSKIY, V.A., dotsent

Intramural venous blood supply of the rectum. Elem.prokt. no.2:13-19 '60. (MIRA 14:11)

1. Iz kafedry topograficheskoy anatomii i operativnoy khirurgii, zaveduyushchiy kafedroy, professor I.N. Askalonov.
(RECTUM—BLOOD SUPPLY)

ASKALONOV, I.N.; BELYANSKIY, V.A.; V'YUNYSHEV, N.G.

Plastic covering of the bone end by a bone-blood mass and capron cover in an experimental amputation of the extremity. Eksper. khir. i anest. 9 no.3:57-60 My-Je '64. (MIRA 18:3)

1. Kafedra operativnoy khirurgii s topograficheskoy anatomiyey (zav. - prof. I.N. Askalonov) Kuybyshevskogo meditsinskogo instituta.

BELYANSKIY, V.B.; MIKHAYLOVA, G.A.

Investigating the properties of atmospherics in the ultralow frequency range (under 1 kHz). Geomag. i aer. 1 no.3:379-386 My-Je '61. (MIRA 14:9)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.

(Ionosphere)

AL'PERT, Ya.L.; BELYANSKIY, V.B., MIYTAKOV, N.A.

Preliminary results of using the Cosmos artificial statellites in radio studies at coherent frequencies of the structure of the ionosphere. Geomag. i aer. 3 no.1:10-24 Ja-F '63. (MIRA 16:4)

1. Ionosfernaya observatoriya v Kyulungsborne, Germanskaya Demokraticheskaya Respublika.
(Artificial satellites in meteorology)

AL'PERT, Ya.L.; BELYANSKIY, V.B.; KUTYAKOV, A.F.

Coherent radio-receiving apparatus for recording the difference of Doppler's frequency replacement in radio waves from an artificial earth satellite. Geomag. i aer. 3 no.1:157-170 Ja-F '63. (MIRA 16:4)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.

(Ionosphere) (Artificial satellites in meteorology)

BELYANTSEV, A. M.

A. M. BELYANTSEV, "On the computation of multi-conductor systems with surface waves." Scientific Session Devoted to "Radio Day", May 1958, Trudreservizdat, Moscow, 9 Sep. 58

Analyzed is a system of N -parallel cylindrical rods on whose surface are given homogeneous boundary conditions of the form $\vec{E}_\tau = z H_\tau$ where Z is the surface impedance tensor. Under the assumption that the transverse dimensions of the whole system is much less than the wavelength, the solution of the problem of exciting electromagnetic waves therein reduces to an investigation of a system of intergro-differential equations for surface electric and magnetic currents in the rods.

The solution of these equations by a perturbation method permits the resonant frequencies of the system(or the surface wave propagation constants along a system of infinitely long rods) as well as the currents in the rods, to be found.

BELYANTSEV, A.M.

Multiconductor systems with surface waves. Izv. vys. ucheb. zav.; radiofiz. 1 no.5/6:112-120 '58. (MIRA 12:8)

1. Issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

(Radio--Antennas)

SOV/109- -4-3-22/38

AUTHORS: A.M. Belyantsev, A.V. Gaponov, Ye.V. Zagryadskiy

TITLE: A Delay System of the "Counter-Stub" Type for Travelling-Wave Amplifiers (Zamedlyayushchaya sistema tipa "Vstrechnyye shtyri" dlya usiliteley s begushchey volnoy)

PERIODICAL: Radiotekhnika i Elektronika, Vol 4, Nr 3, 1959, pp 505-516 (USSR)

ABSTRACT: The possibility of employing a counter-stub system (of the type illustrated in Fig 1) was mentioned by Fletcher in 1952 (Ref 1). Here the problem is investigated in some detail. It is assumed that a counter-stub system of the type shown in Fig 1 can be represented by means of an equivalent circuit which consists of a parallel-conductor transmission line with capacitances connected across the line at spacings 1. The circuit is shown in Fig 3. The scattering equation of the system is given by:

$$\cos\varphi = \cos kl \left(1 + \frac{C_o + \tilde{C}_o}{2C_1}\right) - \frac{kC_T}{2C_1} \sin kl, \qquad (1)$$

where k is the wave number, l is the length of the stubs, C_o and $\tilde{C}_o$ are the capacitances between the

Card 1/5

A Delay System of the "Counter-Stub" Type for Travelling-Wave Amplifiers

stubs and the "base", respectively; C_1 is the capacitance between neighbouring stubs (per unit length); $j\omega C_T = jB_T$ is the equivalent capacitance of a node. The above circuit does not take into account the cross-coupling capacitances of the system. If these capacitances are taken into account, the equivalent circuit becomes more complicated and is in the form of the diagram shown in Fig 4. For this case the characteristic equation of the system is given by:

$$\operatorname{tg}^2 \frac{kl}{2} = \frac{C_o + 4 \sum_{n=1}^{m+1} C_n \sin^2 \frac{n\varphi}{2}}{C_o + 4 \sum_{n=1}^{m+1} C_n \sin^2 \frac{n}{2}(\varphi + \pi)} \qquad (2)$$

where C_n is the capacitance (per unit length) between the stubs which are situated at distances $nD/2$ from each other. The summation in Eq (2) is carried out up to the values of n such that the cross-coupling capacitances

Card 2/5

become negligible. For the counter-stub system in which the "hairpins" are displaced vertically (see Fig 2) or with "hairpins" whose teeth have different cross-sections (see Fig 5), the scattering equation is given by Eq (4). The meaning of the various symbols in Eq (4) should be clear from Fig 5. The scattering curves for two different systems with displaced and differing "hairpins" are shown in Figs 6 and 7. Fig 6 corresponds to the system with similar but displaced "hairpins"; curves (1) and (3) of the figure are corroborated by some experimental points. Fig 7 illustrates a system in which the "hairpins" have different cross-sections. It was found that a decrease in the scattering and an increase in the transmission bandwidth of the system could be obtained, if one of the "hairpins" was removed (screened) from the "base". Examples of such systems are illustrated by the scattering curves of Fig 8. The relative magnitude of the electric field in a counter-stub system can be represented by the so-called interaction impedance or coupling impedance. This is defined by:

A Delay System of the "Counter-Stub" Type for Travelling-Wave Amplifiers

$$K^m_{\alpha\beta} = \frac{E^m_\alpha E^m_\beta}{2h^2_m P} , \qquad (6)$$

where E^m_α and E^m_β are the spatial harmonics of the electric field component, which interact with the electron beam of the system; b_m is the propagation constant of the m-th harmonic, while P is the power carried by the wave. The coupling impedance of the circuit shown in Fig 3 is given by Eq (10'), where the first term is defined by Eq (10"). The coupling impedance of the system shown in Fig 7, in which the first fundamental harmonic is "separated", is given by Eq (14'). On the other hand, in the systems where the "hairpins" are displaced in the horizontal plane, the impedance is also given by Eq (14"), except that the amplitude is represented by Eq (15). The amplitudes of the coupling impedance for the first harmonic of the system shown in Fig 7 is illustrated in Fig 10. Fig 11 shows the coupling impedance of a system with horizontally displaced

Card 4/5

A Delay System of the "Counter-Stub" Type for Travelling-Wave Amplifiers

"hairpins". The coupling impedance of the system was also measured experimentally, and the results are shown by the lower curve of Fig 12; the upper curve of Fig 12 was calculated; this is in poor agreement with the experimental data which is not surprising since Eqs (13) and (14) should be regarded as comparatively rough approximations. On the basis of the above analysis, it is concluded that the counter-stub systems with separated fundamental waves can be successfully employed in travelling-wave amplifiers operating at cm wavelengths. The method of evaluating the dispersion characteristics proposed by the author is comparatively simple and is sufficiently accurate for most practical applications. There are 12 figures and 5 references, 2 of which are English, 2 Soviet and 1 French.

Card 5/5

SUBMITTED: July 9, 1957

21175
S/141/60/003/006/014/025
E192/E382

9,1310 (also 1130

AUTHOR: Belyantsev, A.M.

TITLE: Theory of Coupled Resonators

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1960, Vo. 3, No. 6, pp. 1022-1032

TEXT: A system of resonators coupled by means of narrow parallel slots, cut in a thin metal cylinder, is considered (Fig.1a) It is assumed that each resonator has only one slot. It is clear that the resonator so coupled can be regarded as another resonator having a new spectrum of wave numbers $\bar{k}_\nu$ and eigen functions $\underline{E}_\nu$ and $\underline{H}_\nu$. The derivation of integral-differential equations for the voltages (or magnetic currents J_p) for the slots consists of determining the longitudinal components of the magnetic fields as functions of the voltages on both sides of the screen in which the slots are cut. For narrow slots, the longitudinal magnetic-field component at the aperture of a slot antenna is normally given

Card 1/13

Theory of ....

by a quasi-stationary singularity and a regular field (Ref. 3):

$$H_z = \hat{L}J/\pi\, i\chi k Z_o + H_z^{per}\{J\} \qquad (1)$$

where $\hat{L} = \partial^2/\partial z^2 + k^2$, k is the wave number, z is the coordinate along the slot, $Z_o = \sqrt{\mu/\varepsilon}$, $\chi = \left[\ln(\ell/a)\right]^{-1}$ is a small parameter and H^{per} is the regular portion of the field; a is the width of the slot and ℓ is the smallest characteristic dimension of the space field variation in the vicinity of the slot. The resonance terms of the "regular" portion of the field in the aperture of the slot antenna are in the form (Ref. 1):

Card 2/13

Theory of ....

$$H_z = \frac{\hat{I}J}{\pi i \chi k Z_0} - i\frac{k}{Z_0}\sum_{\nu}\frac{h_\nu H_{z\nu}}{k_\nu^2 - k^2} + \hat{H}_z^{per}(J), \qquad (2)$$

where k_ν, $\underline{H}_\nu$ are eigen values and normalised eigen functions of a non-perturbed resonator. These are expressed by:

$$h_\nu = \frac{1}{V}\int_S j^m H_\nu \, dS,$$

$$\int_V H_\nu H_\mu \, dV = -V\delta_{\nu\mu},$$

$$\delta_{\nu\mu} = \begin{cases} 1 & \nu = \mu \\ 0 & \nu \neq \mu \end{cases}$$

where S is the area of the slot,
W is the volume of the resonator,

Card 3/13

Theory of ....

$j^m = [En]$ is the density of the surface magnetic flux and

n is an external normal.

For a resonant cavity of a groove type, where the quasi-stationary singularity of the field in the slot aperture is absent on one side of the screen and the structure of the electrical field on the slot is known, the resonance terms of the regular portion of the field can be expressed in terms of the surface impedance (Ref. 4), i.e:

$$H_z = j_z^m / Z \qquad (3)$$

where Z is a uniform surface impedance. The longitudinal component of the magnetic field at the surface of the slot seen from the coupling side can be written as (Ref. 5):

Theory of ....

$$\tilde{H}_z^p = -\frac{1}{i\omega}\hat{L}\sum_{q=1}^{N}[\psi_p(x_p, y_p, j_q^m) - \psi_0(x_0, y_0, j_q^m)] + H_z^0 + O(R/\lambda). \quad (4)$$

Here, ω is the periodic frequency,
$\sum$ is the solution of a two-dimensional static problem,
H_z^0 is the longitudinal component of the magnetic field at a point $M(x_0, y_0)$ of the coupling region, and
$O(R/\lambda)$ is the field of the order $R_0/\lambda\tilde{H}_z^p$.

By introducing the notation of:

$$\psi_p(x_p, y_p, j_q) - \psi_0(x_0, y_0, j_q) = J_{q/pq}^{-1}/\Gamma\mu$$

Eq. (4) can be written as:

Card 5/13

Theory of ....

$$\tilde{H}_z^0 = -\frac{1}{\pi i k Z_0}\hat{L}\sum_{q=1}^{N}\tilde{\chi}_{pq}^{-1}J_q + H_z^0 + O(R/\lambda). \qquad (4a)$$

By integrating this equation it is found that:

$$H_z^0 = -\frac{1}{\pi i k Z_0}\hat{L}\sum_{q=1}^{N}\tilde{\chi}_{q,\text{III}}^{-1}J_q + \frac{1}{ikZ_0 S_\perp}\sum_{q=1}^{N}J_q - O_{\text{III}}(R/\lambda). \qquad (5)$$

In this, N denotes the number of resonators and:

$$\psi_p(x_p, y_p, j_q) - \psi_0(x_0, y_0, j_q) = J_q\tilde{\chi}_{pq}^{-1}/\pi\mu.$$

It is now assumed that for N_1 resonators the field in the aperture in the slot from the side of the resonant cavity can

Theory of ....

be expressed by Eq. (2) and for the remaining $(N - N_1)$ resonators in the form of uniform impedance conditions as given by Eq. (3). It is found from the continuity conditions for the magnetic field that the magnetic currents of the system are given by:

$$\hat{L}\sum_{q=1}^{N}\gamma_{pq}^{-1}J_q=\frac{\pi}{S_\perp}\sum_{q=1}^{N}J_q-\pi k^2\sum\frac{h_\nu^p H_\nu^p}{k_{\nu p}^2-k^2}+\pi ik\,Z_0(M_p^{ст}+O_p) \quad (6)$$

$$(p=1,2,\ldots,N_1);$$

$$\hat{L}\sum_{q=1}^{N}\gamma_{pq}^{-1}J_q=\frac{\pi}{S_\perp}\sum_{q=1}^{N}J_q+\pi ikZ_0\left(\frac{J_p}{Z_p d_p}+M_p^{ст}+O_p\right) \quad (7)$$

$$(p=N_1+1,\ N_1+2,\ldots,\ N),$$

Card 7/13

Theory of ....

where

$$\tilde{\chi}_{q,mn}^{-1} = (1/S_\perp) \int_{S_\perp} \tilde{\chi}_q^{-1}(x_\rho, y_\rho)\, dx_\rho\, dy_\rho,$$

in which H_p^{CT} is an external field directed along the axis z. Eqs. (6) and (7) can be solved with respect to $\hat{L}J_m$ and are thus represented by:

$$\hat{L}J_m = \frac{\pi\chi x_m}{S_\perp} \sum_{q=1}^{N} J_q - \pi k^2 \chi \sum_{q=1}^{N} x_{qm} \left[T_q - i \frac{Z_0}{k} (M_q^{CT} + G_q) \right] \qquad (8)$$

$$(m = 1, 2, \ldots, N),$$

where χ is a small parameter. Now, Eqs. (6), (7) (or (8)) together with:

Card 8/13

Theory of ....

$$h_{\nu}^{m} = \frac{1}{V} \int_{L_m} J_m H_{\nu z}^{m} \, dz \qquad (9)$$

and the boundary conditions for the terminals of the slot:

$$J_m(0) = J_m(L_m) = 0 \qquad (10)$$

form a complete system of equations for the voltages (or magnetic currents) in the slots. A slot cut in a thick metal screen (such as shown in Fig. 1a) can be regarded as two slots in a thin cylinder. In this case, the voltage amplitude distribution on the slots 1 and 2 can be described by Eqs. (6)-(10). On the basis of the above general case, three special cases are solved. It is shown that if a slot is cut in an open screen of finite thickness, the natural oscillations

Card 9/13

S/141/60/003/006/014/025
E192/E382

Theory of ....

of the magnetic currents flowing in the aperture of the slot can be described by:

$$\frac{\partial^2 J_{\pm}}{\partial z^2} + k_{\pm}^2 J_{\pm} = 0; \quad J_{\pm}(0) = J_{\pm}(L) = 0 \qquad (15).$$

This represents the zero approximation of the oscillations. Various quantities entering into Eq. (15) are defined by:

$$J_{\pm} = J_1 + J_2, \quad \chi_{\pm}^{-1} = \chi_{11}^{-1} \pm \chi_{12}^{-1}, \quad k_{-} = k,$$

$$k_{+} = (k^2 - 2\pi\chi_{+}/S_{\perp})^{1/2}, \quad M_{\pm}^{\sigma\tau} = M_1^{\sigma\tau} \pm M_2^{\sigma\tau},$$

$$G_{\pm} = G_1 \pm G_2.$$

The case of a slot cut in a thick screen which separates two resonators is also considered. Eqs. (7)-(10) can also be used for finding the scattering characteristics of a periodic

Card 10/13

Theory of ....

waveguide such as shown in Fig. 2a. The zero approximation equations for this waveguide are derived and it is shown that the scattering equation of the system is given by:

$$\sin^2\frac{\varphi}{2}=\frac{\chi_{11}^{-1}-\chi_{12}^{-1}}{2}\left[\frac{\pi}{S_\perp\Gamma^2}-\chi_{12}^{-1}-\frac{(\pi/S_\perp\Gamma^2-\chi_{13}^{-1})(\pi/S_\perp\Gamma^2-\chi_{31}^{-1})}{\pi/S_\perp\Gamma^2-\chi_{33}^{-1}+\pi/d\Gamma\,\mathrm{tg}\,(\Gamma l)}\right]^{-1} \qquad (21)$$

where φ is the phase shift per period. The dependence of the phase shift on frequency kL as calculated from Eq. (21) for $\ell = 0$ is illustrated in Fig. 3 . The author makes acknowledgment to A.V. Gaponov for valuable remarks and advice. There are 3 figures and 7 Soviet references.

Card 11/13

21175

S/141/60/003/006/014/025
E192/E382

Theory of ....

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute of Gor'kiy University)

SUBMITTED: July 5, 1960

Fig.3

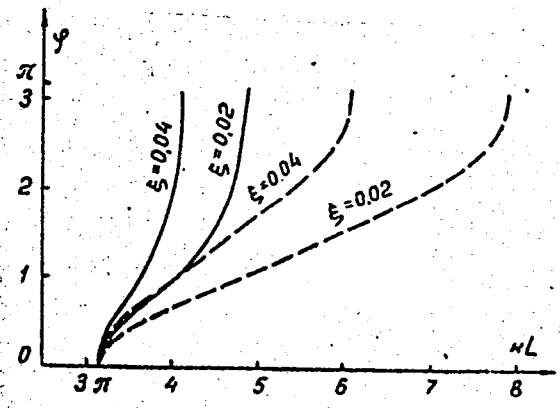


Рис. 3. Зависимость сдвига фазы φ от частоты kL при $l = 0$
Размеры системы и обозначения приведены на рис. 2.

Card 12/13

S/141/62/005/001/011/024
E140/E435

24,2200

AUTHORS: Belyantsev, A.M., Bogatyrev, Yu.K.

TITLE: Formation of electromagnetic shock waves with two discontinuities

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika, v.5, no.1, 1962, 116-121

TEXT: The author studies the question of the formation of video impulses in nonlinear LC lines and finds that in the case of ferrite cores with hysteresis, discontinuities may be formed on both leading and trailing edges. The formulae given permit the behaviour of such a line to be predicted from the magnetization curve, or the curve to be calculated from the shape of the video impulses. An experimental verification was performed at relatively low frequencies. There are 4 figures.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Radiophysics Scientific Research Institute at Gor'kiy University)

SUBMITTED: June 14, 1961

Card 1/1

S/141/62/005/001/022/024
E140/E435

9,1400

AUTHORS: Belyantsev, A.M., Ostrovskiy, L.A.

TITLE: Propagation of impulses in transmission lines with semiconductor junction capacitances

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika, v.5, no.1, 1962, 183-187

TEXT: The formation of discontinuities in the flanks of pulses transmitted down nonlinear transmission lines has been explained in terms of evolution of simple waves and the formation of shock waves. The study of powerful waves in lines containing ferrite shows however that relaxation processes must also be taken into account. The study of the phenomena in lines containing semiconductor junction capacitances was undertaken since here relaxation effects occur at much higher frequencies than with ferrites, and the power levels required for the experiment are far less than for ferrites. The expected risetime shortening was observed and the lower limit of risetime, of the order of 2 to 5 ns, was found to be due to dispersion of the junction capacitances. No appreciable relaxation effects were detected.

Card 1/2

1/B

A related phenomenon was also studied and briefly reported, namely the more than doubling of amplitude in reflection from an open-circuited end of such a transmission line. Factors up to 2.5 were obtained in a line loaded by collector-emitter capacitance. There are 5 figures.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Radiophysics Scientific Research Institute at Gor'kiy University)

SUBMITTED: July 10, 1961

Card 2/2

L 17294-63 BDS

ACCESSION NR: AP3004841 S/0141/63/006/003/0551/0560

45

AUTHOR: Belyantsev, A. M.; Bogaty*rev, Yu. K.; Solov'yeva, L. I.

TITLE: Formation of shock electromagnetic waves in transmission lines containing unsaturated ferrite

SOURCE: IVUZ. Radiofizika, v. 6, no. 3, 1963, 551-560

TOPIC TAGS: electromagnetic wave, shock wave, transmission line, ferrite

ABSTRACT: Results are submitted of an experimental investigation of the formation and growth of electromagnetic shock waves. It is proved that with a slow (static) variation in intensity magnetization of ferrite, the shock-wave formation is largely due to an evolution of a quasi-simple wave. With rapid (dynamic) variation in the ferrite magnetization, the dissipation of energy associated with the flux reversals in ferrite plays an important part. The effect of ferrite parameters upon the rate of formation and growth of the shock wave is investigated.

Card 1/2

L 17294-63

ACCESSION NR: AP3004841

0

Four designs of transmission lines, as well as standard ferrites and F-100, F-400, F-600, and K-65 experimental ferrites, were investigated. It was found that shock-wave formation occurs more rapidly with higher saturation flux densities and with lower remanence. The optimum number of line sections necessary for the shock-wave formation was found theoretically and experimentally. Orig. art. has: 10 figures, 2 formulas, and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific-Research Radiophysics Institute, Gor'kiy University)

SUBMITTED: 17Jul62 DATE ACQ: 27Aug63 ENCL: 00

SUB CODE: GE, PH NO REF SOV: 009 OTHER: 000

Card 2/2

L 17293-63 BDS

ACCESSION NR: AP3004842 S/0141/63/006/003/0561/0571

AUTHOR: Belyantsev, A. M.; Bogaty*rev, Yu. K.; Solov'yeva, L. I. 45

TITLE: Steady-state shock electromagnetic waves in transmission lines containing unsaturated ferrite

SOURCE: IVUZ. Radiofizika, v. 6, no. 3, 1963, 561-571

TOPIC TAGS: electromagnetic wave, shock wave, transmission line , ferrite, unsaturated ferrite

ABSTRACT: As field structure in the region of a rapidly-traveling transient jump is basically similar to that of a steady-state shock wave, the effect of the field-jump magnitude and initial conditions upon the rate of propagation of the shock wave and its impedance was experimentally investigated; also studied was the effect of line and ferrite parameters upon the shock-wave structure. Toroidal-coil-line delay time and shock-wave impedance were determined

Card 1/2

L 17293-63
ACCESSION NR: AP3004842

theoretically and experimentally. Leading-edge duration of about 1 nanosec. and currents of about 100 amp. amplitude were used. Special experimental ferrites F-100, F-400, F-600, and K-65 were used; F-600 ferrite apparently proved best for obtaining steep wave fronts. "The authors are very thankful to A. V. Gaponov, L. A. Ostrovskiy, and G. I. Freydman for their advice and going over the manuscript." Orig. art. has: 11 figures and 7 formulas.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific-Research Radiophysics Institute, Gor'kiy University)

SUBMITTED: 17Jul62 DATE ACQ: 27Aug63 ENCL: 00

SUB CODE: GE, PH NO REF SOV: 010 OTHER: 001

Card 2/2

ACCESSION NR: AP4042516 S/0109/64/009/007/1188/1197

AUTHOR: Belyantsev, A. M.; Gaponov, A. V.

TITLE: Waves with complex propagation constants in coupled transmission lines having no energy dissipation [Report at the All-Union Radio-Day Conference, Moscow, 1961]

SOURCE: Radiotekhnika i elektronika, v. 9, no. 7, 1964, 1188-1197

TOPIC TAGS: transmission line, coupled transmission lines, propagation constant, complex propagation constant

ABSTRACT: Using coupled transmission lines describable by telegraph or difference (in case of periodic structures) equations as a model, the conditions of existence and methods of setting up waves having complex propagation constants are investigated. This dispersion equation determining the propagation constants β_i is developed:

$$\beta^2_i = \frac{1}{2}(A \mp \sqrt{D}).$$

Card 1/2

ACCESSION NR: AP4042516

Here: $A = \beta^2_{01} + \beta^2_{02} - 2\beta_{01}\beta_{02}bf$;

$$D = (\beta^2_{01} - \beta^2_{02})^2 - 4\beta_{01}\beta_{02}[bf(\beta^2_{01} + \beta^2_{02}) + \beta_{01}\beta_{02}(b^2 + f^2)];$$

$\beta_{0m} = (X_m B_m)^{1/2}$ are the partial propagation constants; f and b are the coupling factors. The case of a matched load connected to the line is considered. The effect of the dissipation of energy in the coupled lines on the imaginary part of the propagation constant is explored, as well as the waves in periodic structures. Supporting experiments with a set of coupled Π - and T-waveguides with gratings are briefly reported. "In conclusion, the authors wish to thank V. I. Kryukova who performed a considerable part of the measurement of dispersion characteristics of the coupled Π - and T-waveguides." Orig. art. has: 9 figures and 20 formulas.

ASSOCIATION: none

SUBMITTED: 28Apr64 ENCL: 00

SUB CODE: EC NO REF SOV: 008 OTHER: 000

Card 2/2