BOGOMOLOV, S. G.

Dissertation: "Infrared Absorption Spectra and Structure of Molecules of Some Classes of Organic Compounds." Cand Phys-Math Sci, Leningrad State Pedagogical Inst, Leningrad, 1953. (Referativnyy Zhurnal--Khimiya, Moscow, No 12, Jun 54)

SO: SUM 318, 23 Dec 1954

BOGOMOLOV, S. G.. 11 Aug 53

USSR/Chemistry - Pharmaceuticals

"Infra-Red Spectra and the Structure of Semicarbazones," S.G. Bogomolov, I.Ya. Postovskiy and Yu.N. Sheynker, Ural Polytech Inst im S.M. Kirov, Sverdlovsk, and All-Union Sci-Res Chemicopharm Inst im Ordzhonikidze, Moscow

DAN SSSR, Vol 91, No 5, pp 1111-1114

Studied the characteristics of the chemical structure of semicarbazones with the aid of infra-red absorption spectra. In all of the semicarbazones studied, an absorption band was noticed in the region 1588-1626 cm^{-1}, which apparently indicates a deformational oscillation of the $-NH_2$ group. Compds of this class are effective antituberculous drugs. Presented by Acad V.M. Rodionov 17 Jun 53.

266T7

BOGOMOLOV, S.G.

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
Electronic Phenomena and Spectra

Infrared and ultraviolet spectra of absorption of some acetylated derivatives of 2-aminothiazole. S. G. Bogomolov, Yu. N. Shrinker, and I. Yu. Postovskii (All-Union Chem. Pharm. Inst., Moscow). *Doklady Akad. Nauk S.S.S.R.* 93, 277–80(1953).—Absorption spectra of acetylated: 2-aminothiazole (I), 2-amino-4-methylthiazole (II), 2-amino-4,5-dimethylthiazole (III), 2-amino-4-phenylthiazole (IV), and 2-amino-4-methyl-5-bromothiazole (V), as well as 2-(*N*-methylacetamido)-4-methylthiazole (VI), and 2-acetylimino-3,4-dimethyl-4-thiazoline (VII) were recorded (curves are shown). VI, known to have a thiazole structure, shows bands at 1648 and 1542 cm.$^{-1}$; VII shows only a band at 1588 cm.$^{-1}$ I-V show 2 bands in 1650–90 and 1535–50-cm.$^{-1}$ regions, while the thiazoline band at 1588 cm.$^{-1}$ is totally absent. Thus I-V have structures analogous to VI. II, III, IV, and V show a band at 3155 cm.$^{-1}$, possibly that of NH vibration; this is absent in VI and VII. In I there are seen 3155- and 3080- and 3250-cm.$^{-1}$ bands, the origin of the last 2 being unknown. VI shows absorption max. 2770 A. (log ϵ 3.8); VII shows absorption max. 3020 A. (log ϵ 4.0). I-V show absorption max. in the area of 2680–2840 A. close to that of VI. I shows a slight band at 2960 A. (log ϵ 2.96), possibly caused by thiazoline tautomer in the EtOH soln. (3–7% estd.). No bands at 3020 A. are seen in II-V, showing the absence of thiazoline form. G. M. Kosolapoff

12/4/54

BOGOMOLOV, S. G.

USSR/Physics - Spectral analysis

Card 1/2 Pub. 43 - 58/62

Authors : Sheynker, Yu. N., and Bogomolov, S. G.

Title : Infrared spectra and problems of tautomerism of heterocyclic compounds

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, page 738, Nov-Dec 1954

Abstract : The problems of tautomerism and double reactivity of heterocyclic compounds were investigated by means of infrared absorption spectra. Infrared absorption spectra (2.5 - 13μ) were obtained for hydroxy derivatives of the heterocyclic series (derivatives of pyridine, pyridazine, pyrimidine, pyrazine, triazine, thiazole, etc.) and sodium and silver salts of these derivatives as intermediate products in the reactions of these compounds.

Institution : The S. Ordzhonikidze All-Union Sc.-Res. Chem. Pharmac. Inst.

Submitted : .....

Card 2/2 Pub. 43 - 58/62

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, page 738, Nov-Dec 1954

Abstract : It was established that the hydroxy derivatives of the heterocyclic series in free state (not in reaction) have an oxo-form structure and their double reactivity is not connected with the difference in structure of the metallic salts which are the intermediate reaction products.

BOGOMOLOV, S. G.

USSR/ Chemistry - Spectral analysis

Card 1/1 Pub. 43 - 60/62

Authors : Bogomolov, S. G.; Sheynker, Yu. N.; and Postovskiy, I. Ya.

Title : The structure of 2-amino-4-methylthiazole sulfonic acids explained by means of infrared spectra

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, page 740, Nov-Dec 1954

Abstract : Utilizing the infrared spectra of isomeric 2-amino-4-methylthiazole sulfonic acids and many derivatives of 2-aminothiazole the authors established the proper structure of these acids. The spectra of isomeric acids indicate that the low-fusible acid has the NH_2-group in the molecule and the high melting acid the NH group and their structures are different. The conversion of the low-melting acid into high-melting represents a regrouping of the sulfo-acid into sulfamic acid.

Institution : The S. Ordzhonikidze All-Union Sc. Res. Chem. Pharmac. Inst.

Submitted : .....

Bogomolov, S.G.

USSR/Chemistry - Analytical

Card 1/1 : Pub. 151 - 30/37

Authors : Bogomolov, S. G.; Sheynker, Yu. N.; and Postovskiy, I. Ya.

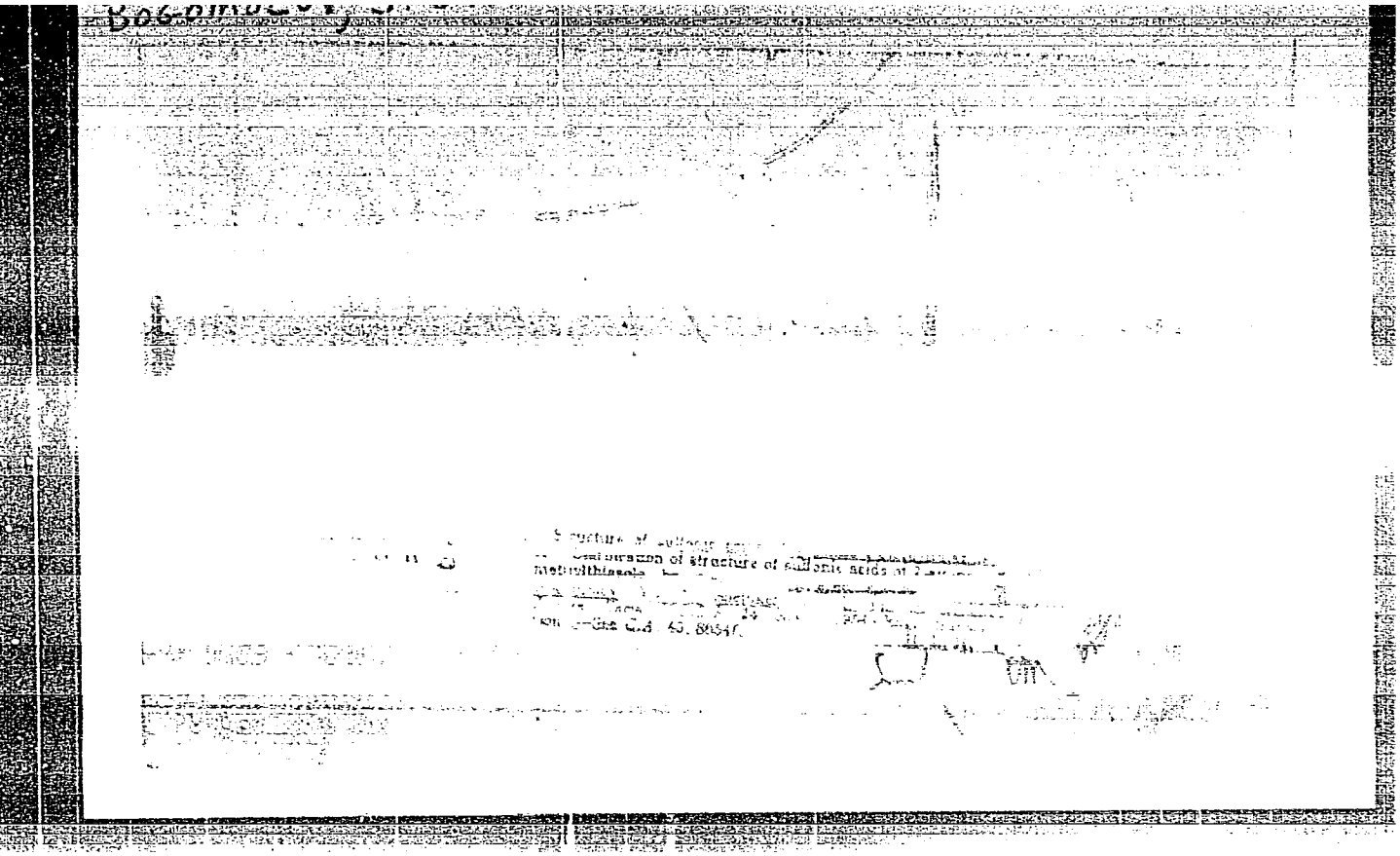
Title : The structure of 2-amino-4-methylthiazolesulfonic acids. Part 2.-The structure of 2-amino-4-methylthiazolesulfonic acid analyzed by means of infrared spectra

Periodical : Zhur. ob. khim. 24/3, 539-548, Mar 1954

Abstract : The structure of 2-amino-4-methylthiazolesulfonic acid and numerous other 2-aminothiazole derivatives was determined on the basis of infrared absorption spectra. The low-fusible sulfo-acid obtained during sulfonation of 2-amino-4-methylthiazole was found to be 2-amino-4-methylthiazole-5-sulfonic acid and its isomeric high-melting acid formed from low-melting acid during heating with H_2SO_4-4-methylthiazole-2-sulfamic acid. It was also established that the product obtained from chlorosulfonation of 2-acetamide-4-methylthiazole was actually N-acetylated chloride of 5-sulfonic acid and all the sulfamides derived from acid chlorides (amides of that acid). Eight references: 3-USA; 4-USSR and 1-German (1939-1953). Tables; graphs.

Institution : All-Union Scientific Research Chemical-Pharmaceutical Institute, Moscow

Submitted : August 14, 1953



BOGOMOLOV, S.G.

PRIKHOT'KO, A.F.

24(7) p3 PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Fizychnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Gazer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Landsberg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Korniitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Miliyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

Card 1/30

POSTOVSKIY, I.Ya.; TIMFILOVA, L.F.; SHEYNKER, Yu.N.; BOGOMOLOV, S.G.

Coplanar position of phenyl radicals in biphenyl derivatives.
Fiz. sbor. no.3:388-390 '57. (MIRA 11:8)

1. Ural'skiy politekhnicheskiy institut im. S.M. Kirova.
(Biphenyl--Spectra) (Stereochemistry)

BOGOMOLOV, S.G

AUTHORS: Omel'chenko, S. I., Pushkareva, Z. V., Bogomolov, S. G. 79-12-12/43

TITLE: Investigation of the Structural Peculiarities and Chemical Transpositions of Carbazole and its Derivatives
(Issledovaniye osobennostey stroyeniya i khimicheskikh prevrashcheniy karbazola i nekotorykh yego proizvodnykh)
The Absorption Spectra in the Ultra-Violet Part of Carbazole and some of its Derivatives
(Spektry pogloshcheniya v ultrafiolete karbazola i nekotorykh yego proizvodnykh)

PERIODICAL: Zhurnal Obshchey Khimii 1957, Vol. 27, Nr 12, pp. 3220-3226 (USSR)

ABSTRACT: Inspite of many possibilities, to gain carbazole in important quantities in the big coking plants, up to now stone coal carbazole was exploited only very little. One of the reasons is the peculiarity of its chemical properties. Its chemistry elaborated already as to the most important points still lacks explanation as to practically most appropriate reactions. The work of the authors is dedicated to the investigation of the structural peculiarities of the chemical transpositions and to the practical applicability of some carbazole derivatives.

Card 1/3 As it is known the characteristic properties of a molecule

Investigation of the Structural Peculiarities and Chemical Transpositions of Carbazole and its Derivatives. The Absorption Spectra in the Ultra-Violet Part of Carbazole and some of its Derivatives. 79-12-12/43

are mainly based on the position of the electrons and on the type of the compound. Therefore, in order to investigate the properties of the carbazole molecule, special attention was paid to its absorption centres in the ultra violet and partly also in the visible part. 10 derivatives of carbazole and of diphenylamine were synthesized and the absorption spectra of 13 compounds were put up. It was demonstrated that in the occasion of the transition from the diphenylamine derivatives tc those of carbazole the occurrence of the diphenyl compound causes a considerable change in the ultraviolet absorption spectra. The substituents at the nitrogen atom in the case of carbazole as well as in the case of diphenylamine produce different effects according to their electronic character. The fixation of the unseparated electron couple in nitrogen by the formation of the N - oxides practically leads to the elimination of nitrogen from the compound and to an abrupt change of the optic molecular properties.
There are 6 figures, 1 table, and 13 references, 5 of which are Slavic.

Card 2/3

Investigation of the Structural Peculiarities and Chemical Transpositions of Carbazole and its Derivatives. The Absorption Spectra in the Ultra-Violet Part of Carbazole and some of its Derivatives. 79-12-12/43

ASSOCIATION: Ural Polytechnical Institute
(Ural'skiy politekhnicheskiy institut)

SUBMITTED: October 25, 1956

AVAILABLE: Library of Congress

1. Carbazole - Synthesis 2. Carbazole - Spectra
3. Carbazole - Structural analysis

Card 3/3

BOGOMOLOV, S.G.

AUTHOR POSTOVSKIY I.YA., TREFILOVA L.F., SHEYNKER YU.N., BOGOMOLOV S.G.

TITLE On Non Coplanar Nature of Phenyl Nuclei In Diphenyl Derivatives. (O nekoplanarnosti fenilnykh yader v proizvodnykh difenila -Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 2, pp 347-350 (U.S.S.R.)

Received 6/1957 Reviewed 7/1957

20-2-29/67

ABSTRACT It was ascertained that in the crystalline diphenyl molecule the phenyl nuclei lie in one and the same plane despite a partial superposition of the hydrogen atmospheres (which are inortho-position). The coplanarity of this compound is obviously caused by special conditions of the molecule package in the crystal, on which occasion the energy of a slight sphere compression of the hydrogen atoms is compensated by the convenient plane position. At the same time it is known that in the liquid and gaseous phase the diphenyl nuclei are not coplanar. This is also true for a number of n- and n'-diphenyl-substitutes in solutions in the case of lacking substituents in O-positions. So far, however, specifications the structure of such derivatives in crystalline condition are lacking. The authors spectroscopically investigated crystals of the diphenyl ketones within the infra-red domain. Structure formulas for the substances I.-IV. are given. In the I. and III.: The electron-giving influence of the methoxyl and the amino groups on the ketone group is transmitted on diphenyl-n-anisyl-ketone and diphenyl-n-aminophenyl-ketone by phenyl

Card 1/3

cycles, whereas in the II. and IV.: This influence is transmitted on n-metoxydiphenyl-ketone and n-aminodiphenyl-phenylketone by the diphenyl system. The assumption had to be examined that in the case of a noncoplanarity of the phenyl nuclei in diphenyl the mutual influence of the metoxy-and amino-groups with the carbonyl group in the compounds II. and IV.will be smaller in consequence of the destruction of the conjugation than in the compounds I.and III. As known,the frequency of the valence fluctuation of the carbonyl group in the direction of long waves becomes more dislocated the further the -π-electron interaction of the carbonyl group with ether electron-giving groups of the molecule increases. Accordingly the oscillation frequency of the carbonyl group in the compound I will have to be smaller than in the compound II. and the oscillation frequency in III.smaller than in IV. Also polarographical determinations in a dioxane solution (as far as soluble) were carried out. Furthermore the correspending benzophones were investigated. As evident from schedule 1 the influence of the electron-giving group OCH_3 becomes manifest in the lowering of the characteristic oscillation frequency of the C=O-group. The NH_2-group has a similar effect. From the results of the infrared spectra it can be concluded that the reciprocal influence of the groups in the ketones I and II both in solutions and in crystalline condition is less distinguished by the diphenyl system than in the

On Non Coplanar Nature of Phenyl Nuclei In Diphenyl Derivatives.

20-2-29/67

corresponding phenyl ketones. The results of the polarographical reduction entirely harmonize with this conclusion. All particulars here given about the complicated transmission of interaction in the ketones II and IV can serve as an indication concerning the noncoplanarity of the diphenyl in these compounds as well as in the crystalline condition.
(With 2 illustrations, 2 schedules, 14 citations from publications).

ASSOCIATION Uralic Polytechnic Institute "S.M.Kirova"
PRESENTED BY NAZAROV I.I., Member of the Academy
SUBMITTED 25.5.1956
AVAILABLE Library of Congress
Card 3/3

24(7) SOV/48-23-9-50/57

AUTHORS: Bogomolov, S. G., Drobiz, F. D., Morozov, A. G.

TITLE: The Spectroscopic Determination of the Microelements in Tissue Albumins

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 9, pp 1158 - 1159 (USSR)

ABSTRACT: In the present paper animal albumins are investigated with respect to Co, Ni, and Cu, which are present within a concentration range of 0.1 - 0.001%. The albumins were extracted from various organs of white rats, were washed in alcohol, acetone, and ester and were then converted to ashes. After 20-fold enrichment the samples were investigated according to the method of three standards in a spectrograph of the type ISP-22. The sample was located in the crater of the lower carbon electrode. For the construction of the calibration curve synthetic standards were used, the setting of which is discussed in detail. The base material of these standards consisted of salts, to which Co-, Ni- and Cu-compounds were added in suitable quantities. For reasons of comparison, samples and standards of a vanadium compound (V_2O_5) were added. Reproducibility showed an arithmetical error of $\pm$ 5%. It is said in the summary that,

Card 1/2

The Spectroscopic Determination of the Microelements in Tissue Albumins SOV/48-23-9-50/57

in the case of the subcutaneous injection of chlorine salts of certain microelements, the content of these microelements in the albumins of some organs is greater than that in the corresponding organs of control animals.Co-, Ni-, and Cu-salts introduced into the body of animals are selectively enriched in the albumins of some organs. The accumulations are accompanied by an increase of the SH-groups, which confirms the opinion concerning a connection existing between the introduced microelements and the SH groups. There are 1 table and 5 Soviet references.

ASSOCIATION: Sverdlovskiy meditsinskiy institut (Sverdlovsk Medical Institute)

Card 2/2

24(7),5(4)

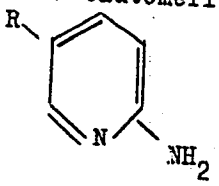
AUTHORS: Bogomolov, S. G., Bystritskaya, M. G., Kirillova, M. M.

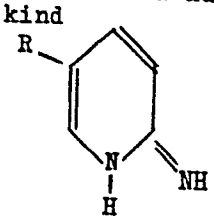
SOV/48-23-10-11/39

TITLE: Characteristic Bands in the Pyridine Series

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 10, pp 1199-1201 (USSR)

ABSTRACT: The authors investigated the infrared- and ultraviolet absorption spectra of 16 heterocyclic compounds, one part of which had already been synthetized previously. Several of them were biologically active. The samples were subjected to an infrared spectropic analysis in form of emulsions in oil. (IKS-6-spectrometer with NaCl- and LiF-prisms), as well as to an ultraviolet analysis in form of a solution in ethyl alcohol by using a SF-4-spectrometer. For 2-aminopyridine and a number of its derivatives a tautomerism of the kind

a) 

b) 

is possible.

Card 1/2

Characteristic Bands in the Pyridine Series SOV/48-23-10-11/39

Form a is characterized in the range of high infrared frequences by the occurrence of the NH_2-absorption band; within the range of double-bonds a band with $\sim$1640 cm^{-1} (deformation oscillations of the NH_2 groups) may occur besides the absorption band of the pyridine ring ($\sim$1580 cm^{-1}). If the molecule is of the form b, only one band of the NH-valence oscillations, and in the range of the double bonds the band of the C=N-oscillations occurs. The data obtained for all 16 compounds are shown by a table extending over one and a half pages. The data of this table are discussed. There is 1 table.

ASSOCIATION: Sverdlovskiy meditsinskiy institut, Ural'skiy gos. universitet (Sverdlovsk Medical Institute of Ural State University)

Card 2/2

BOGOMOLOV, S.G.; SHAYEVICH, A.B.

Third Ural Symposium on Spectroscopy. Opt.i spektr. 9 no.1:127-129 Jl '60. (MIRA 13:7)
(Spectrum analysis--Congresses)

ARALDUYEV, B.V., inzh.; KOZHEVNIKOVA, Ye.P., kand.med.nauk; BOGOMOLOV, S.G., kand.fiziko-matematicheskikh nauk

Method for the quantitative spectral determination of silicon in the urine. Sbor. rab. po silik. no.2:185-188 '60. (MIRA 14:3)

1. Sverdlovskiy gosudarstvennyy meditsinskiy institut.
(URINE—ANALYSIS AND PATHOLOGY) (SILICON)

GREBENSHCHIKOVA, M.P.; MUKHORINA, K.V.; BOGOMOLOV, S.G.

Absorption spectrum of extracts of potatoes prepared with the diethanolamino salt of malonic acid hydrazide. Vop.pit. 20 no.3: 60-63 My-Je '61. (MIRA 14:6)

1. Iz kafedry fiziki (zav. - dotsent S.G.Bogomolov) i kafedry gigiyeny pitaniya (zav. - prof. A.I.Shtenberg) Sverdlovskogo meditsinskogo instituta.
(MALONATES) (POTATOES—SPECTRA)

BOGOMOLOV, S.G.; PEMOVA, F.D.; KOLOSOVA, L.P.

"Last lines" of the spectrum of 3,4-benzopyrene dissolved in normal hydrocarbons at various temperatures. Izv.AN SSSR 24 no.7:725-727 Je '60. (MIRA 13:7)

1. Sverdlovskiy meditsinskiy institut.
(Benzopyrene--Spectra)

~~Shcherbov, M.A.~~

BOGOMOLOV, S.G.

105

PHASE I BOOK EXPLOITATION SOV/6181

Ural'skoye soveshchaniye po spektroskopii. 3d, Sverdlovsk, 1960. Materialy (Materials of the Third Ural Conference on Spectroscopy) Sverdlovsk, Metallurgizdat, 1962. 197 p. Errata slip inserted. 3000 copies printed.

Sponsoring Agencies: Institut fiziki metallov Akademii nauk SSSR. Komissiya po spektroskopii; and Ural'skiy dom tekhniki VSNTO.

Eds. (Title page): G. P. Skornyakov, A. B. Shayevich, and S. G. Bogomolov; Ed.: Gennadiy Pavlovich Skornyakov; Ed. of Publishing House: M. L. Kryzhova; Tech. Ed.: N. T. Mal'kova.

PURPOSE: The book, a collection of articles, is intended for staff members of spectral analysis laboratories in industry and scientific research organizations, as well as for students of related disciplines and for technologists utilizing analytical results.

COVERAGE: The collection presents theoretical and practical problems of the application of atomic and molecular spectral analysis in controlling the chemical composition of various materials in ferrous and nonferrous metallurgy, geology, chemical industry, and medicine. The authors express their thanks to G. V. Chentsova for help in preparing the materials for the press. References follow the individual articles.

BOGOMOLOV, S.G.; GUDKINA, R.I.; SHAYEVICH, A.B.

Ural Conference on Spectroscopy. Zav.lab. 29 no.11:1400-1401 '63.
(MIRA 16:12)

L 49765-65 EPF(c)/EWT(m)/EWP(j)/EWP(b)/EWP(t) Pc-4/Pr-4 IJP(c) RM/JD
ACCESSION NR: AR5012248 UR/0058/65/000/003/D030/D030

SOURCE: Ref. zh. Fizika, Abs. 3D218

AUTHORS: Bogomolov, S. G.; Veselkova, I. A.; Lodochnikova, V. I.

TITLE: Manifestation of carbon-lead bond in infrared spectra

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 475-482

TOPIC TAGS: carbon lead bond, infrared spectrum

TRANSLATION: Infrared spectra were obtained for 19 compounds with structure $Ar_3Pb(OOCR)_3$ and $Ar_2Pb(OOCR)_3$ in the ~ 3--25 μ region (14 of these compounds were synthesized for the first time). It is established that the Pb-C bond appears in the region 430--460 cm^{-1}.

SUB CODE: OP ENCL: 00

Card 1/1

L 64713-65 EWT(1)/EWT(m)/EPF(c)/EWP(j)/EWA(c) LJP(c)/RPL JW/RM

ACCESSION NR: AR5012268 UR/0058/65/000/003/D042/D042

SOURCE: Ref. zh. Fizika, Abs. 3D315

AUTHOR: Bogomolov, S. G.; Silant'yev, B. Ya.; Vedernikova, F. D.; Vedernikov, G. S.

TITLE: Quasi-line spectra of molecules

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 662-671

TOPIC TAGS: line spectrum, spectrum determination, chemical analysis

TRANSLATION: Quasi-line structure is observed (Shpol'skiy's method) in 1,2-benzanthracene, 5-methyl-3,4-benzacridine, 5-methyl-1,2-benzacridine, N-oxide of phenazine, di-N-oxide of phenazine, 1,2-benzophenothiazine, 3,4-benzophenothiazine and others. The spectra are recorded on a photoelectrooptic device and subjected to vibrational analysis. A photoelectric method is developed for quantitative determination of a number of substances in a specimen from quasi-line spectra with a sensitivity of 10^{-12} - 10^{-13} g.

SUB CODE: SS, QC ENCL: 00

Card 1/1

BOGOMOLOV, S.I., kand.tekhn.nauk, dotsent

Joint vibration of rotor vanes and discs of turbomachines.
Energomashinostroenie 11 no.2:7-11 F '65.
(MIRA 18:4)

BOGOMOLOV, S. I.

BOGOMOLOV, S. I.--"Combined Bending Oscillations of Disks and Blades." Min Higher Education Ukrainian SSR, Khar'kov Polytechnic Inst. V. I. Lenin, Khar'kov, 1955.

SO: Knizhnaya Letopis', No. 35, 1955

S/123/60/000/02/13/015

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1960, No. 2, pp. 285-286, # 7195

AUTHOR: Bogomolov, S. I.

TITLE: The Effect of Transverse Oscillations of the Turbine Disk on the Oscillations of the Blades

PERIODICAL: Tr. Khar'kovsk. politekhn. in-ta, 1958, Vol. 14, pp. 23-41

TEXT: The author gives a detailed analysis of the joint oscillations of a turbine disk and blades and investigates the effect of transverse disk oscillations on the blade oscillations. The mathematical analysis of oscillations of the disk and the blades, fastened on it, is reduced to the solution of a system of differential equations, observing certain boundary conditions and conjugation conditions of the disk and blades. The obtained system results in homogeneous equations with arbitrary constants, and by their successive elimination, they are transformed into a frequency equation of the disk of constant thickness with blades of a constant profile; this equation is then solved by the trial-and-error method.

Card 1/3

S/123/60/000/02/13/015

The Effect of Transverse Oscillations of the Turbine Disk on the Oscillations of the Blades

After determining the frequency of the system, the kind of free oscillations of the disk and blades can be determined from the obtained expressions. The experimental investigation of the effect of transverse oscillations of the turbine disk on the oscillations of the blades was effected with the aid of sand figures on the model of a disk fitted with blades. The diameter of the disk, made with blades of rolled metal of 8 mm thickness, amounted to 855 mm, length of blades to 227.5 mm and width to 30 mm. The oscillations of the model were excited by a vibration device of electromagnetic type. During the resonance transverse oscillations, the frequencies of which were determined by calculations, the sand figures were observed, which made it possible to determine the number and distribution of the nodal diameters of the disk and the blade nodes. Based on theoretical investigations of the simultaneous oscillations of the system and on experiments made with the model, the author draws the following conclusions: If the number of nodal diameters is increased, the oscillation frequencies of the system asymptotically approximate the axial frequency of the single blade. If the oscillation frequencies

Card 2/3

S/123/60/000/02/13/015

The Effect of Transverse Oscillations of the Turbine Disk on the Oscillations of the Blades

are increased, an increase in the number of nodal diameters of the disk can be observed, moreover, this is repeated after the appearance of one, two etc. nodes on the blade. The degree of excitability of oscillations of various kinds depends on the blade length, moreover, for relatively long blades, oscillations of higher kinds can be practically excited more easily. The blades which are placed exactly in the middle between the nodal diameters of the disk perform bending axial oscillations. The blades through which pass the nodal diameters of the disk show torsional oscillations. All the remaining blades perform complex bending - torsional oscillations. A great number of photos of various sand figures are shown, which were obtained by rolling off the disk model fitted with blades. There are 25 figures, 2 references.

K. I. A.

Card 3/3

S/124/61/000/011/046/046
D237/D305

AUTHOR: Bogomolov, S.I.

TITLE: Vibrations of turbine discs with blades, with non-coinciding centers of gravity and retation of plane transverse cross-section

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 11, 1961, 49, abstract 11V392 (Tr. Khar'kovsk. politekhn. in-ta, 1959, 25, 127 - 131)

TEXT: Free transverse oscillations of a disc of uniform thickness with blades of uniform transverse cross-section, whose center of gravity and rotation of the plane of transverse cross-section do not coincide, are investigated. The oscillations of the disc with nodal diameters only are considered. The problem is solved by stating and solving differential equations of free oscillations of the disc and blades. The results are given of experimental investigations into oscillations by means of a model. Theoretical and experimental frequencies of oscillations are compared for the case

Card 1/2

Vibrations of turbine discs ... S/124/61/000/011/046/046
D237/D305

of a disc with three nodal diameters. [Abstractor's note: Complete translation].

Card 2/2

L 17399-63 EWP(r)/EWT(d)/EWP(q)/EWT(m)/BDS AFFTC/ASD/APGC EM/JD

ACCESSION NR: AP3006476 S/0145/63/000/004/0080/0088

AUTHOR: Bogomolov, S. I. (Engineer) 60

TITLE: Analysis of resonance frequency spectrum and forms of vibration of bladed turbine disks 16

SOURCE: IVUZ. Mashinostroyeniye, no. 4, 1963, 80-88

TOPIC TAGS: gas turbine, steam turbine, disk, blade, bladed disk, vibration spectrum, resonance frequency, vibration form, vibration, flexural vibration, blade vibration, disk vibration, flexural torsional vibration 16

ABSTRACT: The performance of bladed turbine disks was analyzed both theoretically and experimentally in order to determine the influence of the vibration of disks on the vibration of blades, to compare the vibration of blades in the disk-blade system with the vibration of isolated blades, and to determine the dependence of special features of blade vibration on factors other than the frequencies of

Card 1/3

L 17399-63
ACCESSION NR: AP3006476

vibration of disks without blades. The differential equations obtained are transformed into finite difference equations so that they may be calculated on electronic computers. The theoretical solution was verified experimentally on turbine disk models consisting of disks (600 mm in diameter) with blades (200 mm long) of constant thickness (20 mm) milled in one piece from laminated metal sheet. Visualization of nodal circles and lines with sand showed that when the disk undergoes flexural vibrations the blades on a bladed disk undergo flexural-torsional vibration regardless of the fact that their centers of gravity and rigidity coincide. With this method it was possible to determine three vibration frequencies (100, 315, and 630 cps) at an identical number of nodal lines. The full solution of this problem (taking account of temperature stresses, stresses due to centrifugal forces, and other factors) will require the application of all known methods of numerical solution of differential and integral equations and the use of the "Strela" electronic computer. Calculation might reveal some unknown causes of defects in bladed turbine apparatus. Orig. art. has: 1 table, 2 formulas, and 7 figures.

Card 2/3

BOGOMOLOV, S.I., kand. tekhn. nauk

Vibrational reliability of steam turbine rotor blades.
Elek. sta. 35 no.3:25-27 Mr '64. (MIRA 17:6)

L 6886-66 EWT(l)/EWT(m)/EWP(w)/EWP(v)/T-2/EWP(k) LJP(c) JD/EM

ACC NR: AR6028090 SOURCE CODE: UR/0124/66/000/005/V070/V070

50
B

AUTHOR: Bogomolov, S. I.

TITLE: On the problem of flexural vibrations of bladed turbine disks 20

SOURCE: Ref. zh. Mekhanika, Abs. 5V544

REF SOURCE: Tr. Kuybyshevsk. aviats. in-t. vyp. 19, 1965, 25-29

TOPIC TAGS: turbine disk, flexural vibration, vibration analysis, torsional vibration

ABSTRACT: The results of theoretical and experimental investigations carried out by the author of combined flexural and torsional vibrations of bladed turbine disks are discussed. Conclusions and recommendations concerning further studies are given. V. S. Gontkevich. [Translation of abstract] [DW]

SUB CODE: 13/

Card 1/1 slw

ACC NR: AR6028086 SOURCE CODE: UR/0124/66/000/005/V035/V036

AUTHOR: Bogomolov, S. I.

TITLE: Problem of bending vibrations of bladed wheels of turbomachines

SOURCE: Ref. zh. Mekhanika, Abs. 5V274

REF SOURCE: Dinamika i prochnost' mashin. Resp. mezhved. nauchno-tekhn. sb., vyp. 1, 1965, 67-72

TOPIC TAGS: vibration analysis, turbine blade, bending strength

ABSTRACT: The results of an experimental investigation of the vibrations of model wheels with blades milled out on them are presented. On one of the wheels the angle of setting of the blades was equal to zero so that the blades vibrated only in an axial direction, on a second wheel the angle of setting of the blades permitted them to vibrate in two principal planes. During bending vibrations of the pliant wheel with sufficiently long blades the nodal circumferences are situated on the blades themselves and the frequency of such forms of vibrations proved to be appreciably lower than the second frequency of an individual blade. During vibrations of the blades in two planes the frequency spectrum becomes denser. During vibrations of the wheel with nodal diameters bending-torsional vibrations of the blades are excited, the character of which depends upon the position of the blade relative to the nodal diameters. [Translation of abstract] B. F. Shorr SUB CODE: 13, 20

Card 1/1

BOGOMOLOV, S.I.

Type of segmentation in Rhabdocoela. Uch.zap.Len.un. no.113:128-142 '49. (MLRA 10:3)
(Turbellaria)

BOGOMOLOV, S.I.

History of the development of Convoluta as related to the morphology of ciliated flatworms. Uch.zap.Kaz.un. 120 no.6: 155-208 '60. (MIRA 16:2)
(Turbellaria)

BOGOMOLOV, S.N., inzh.; NEDOKUCHAYEV, B.N.

SM-566 lifting trays. Mekh. stroi. 16 no.1:28-29 Ja '59.
(MIRA 12:1)

(Loading and unloading)

ANUCHKIN, N.N., inzhener; BOGOMOLOV, S.P., inzhener; STEPANOV, V.G., laureat Stalinskoy premii.

The SM-301 press for moist pressing bricks. Mekh.stroi. 11 no.12:32-34 D '54. (MLRA 8:1)
(Brickmaking machinery)

BOGOMOLOV, S.P., inzhr; GARBUZOV, Z.Ye., inzh.; YES'KOV, S.K., inzh.

The D-390 tamping rollers. Stroi. i dor.mashinostr. 4 no.6: 21-22 Je '59. (MIRA 12:8)
(Rollers (Earthwork))

BOGOMOLOV, S.F., inzh.

Improving the D-390 roller. Stroi. i dor. mash. 6 no.9:17-18 S '61. (MIRA 14:10)

(Road rollers)

BOGOMOLOV, S. P., inzh. (Leningrad); POSTNIKOV, B. A., inzh. (Leningrad)

New machine for concreting irrigation canals. Gidr. i mel. 15 no.3:39-44 Mr '63. (MIRA 16:4)

(Irrigation canals and flumes)

BOGOMOLOV, V. A.

37302. Avtomaticheskiy operator dlya puska i ostanovki gidroagregatov. sbornik nauchn.-tekhn. statyey (Akad. nauk UKR. SSR. in-t elektrotekhniki). VY P. 3, 1929, s. 162 -72.

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

POGORELOV, V. A., Engr.

"The General Equation for Bridge Circuits with Linear Resistance."

Avtomatika i Telekhanika, Vol, 6, No. 3, 1941.

BOGOMOLOV, [illegible] A., Cand. Tec Sci.

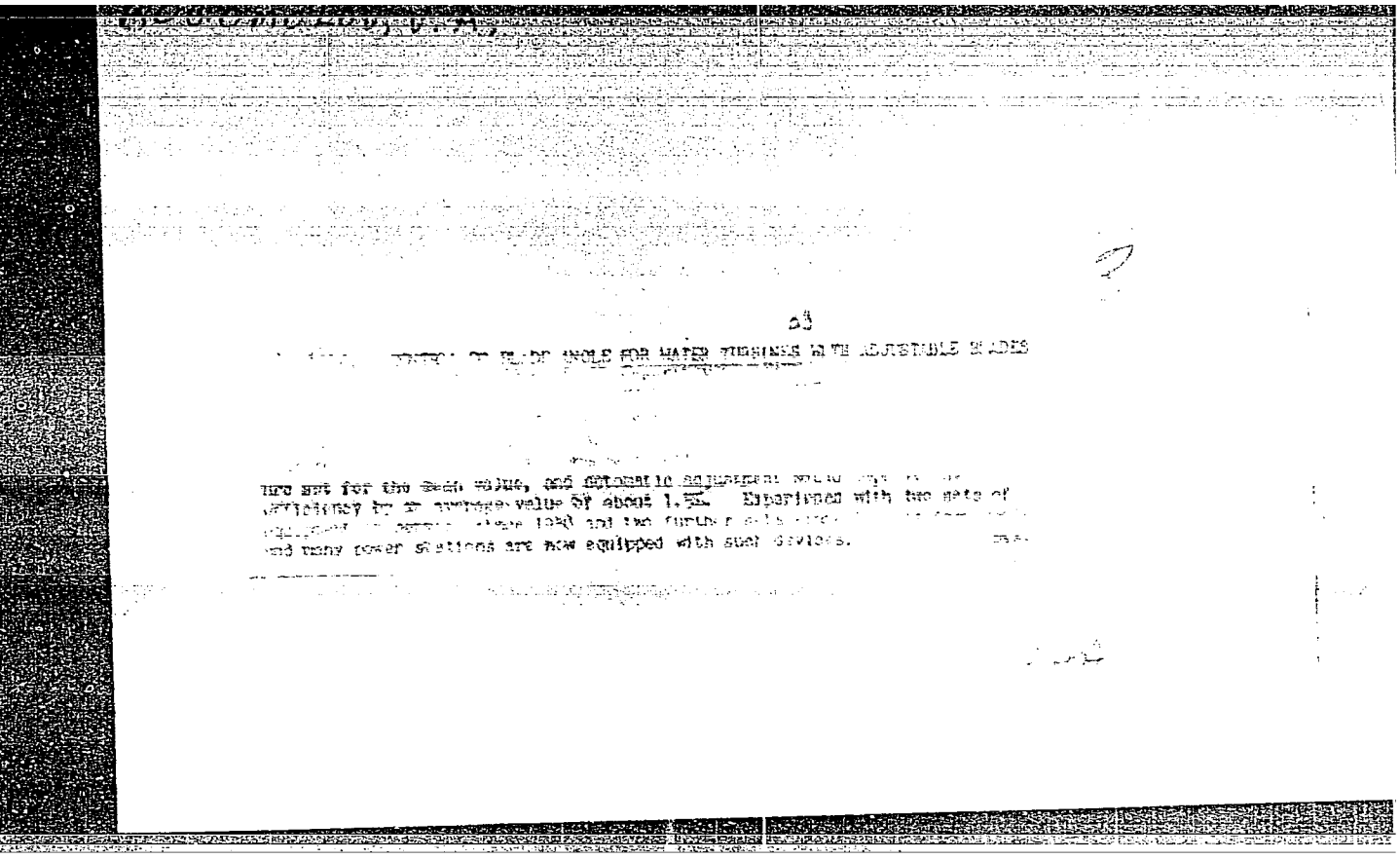
"Automatic Control of the Power of Hydroelectric Stations According to Water Flow."

Aytomatika i Telemekhanika, [illegible] ol. [illegible], No. [illegible], 1941.

BOGOMOLOV, V. A.

Automatic regulation of the power of hydro-electric plants. Moskva, Gos. energ. izd-vo, 1950. 104 p. (50-31631)

TK1081.B64



BOGOMOLOV, V.A.

Automatic control of hydroelectric power stations. Sbor. trud. Lab. gidr. mash. no.7:177-188 '58. (MIRA 12:9)
(Hydroelectric power stations) (Electronic control)

BOGOMOLOV, V.A.; BENIN, V.L.

Automatic control of the power output of hydroelectric power stations according to water current. Sbor. trud. Lab. gidr. mash. no.7:189-197 '58. (MIRA 12:9)
(Hydroelectric power stations)
(Electronic control)

BUKHINIK, Ye.N.; BOGOMOLOV, V.A.

Low-temeperature gaseous nitriding of P9 and P18 steel cutters. Metalloved. i term. obr. met. no. 6:50 Je '64. (MIRA 17:7)

LAZAREV, V.P., kand.tekhn.nauk; BOGOMOLOV, V.A., inzh.

Practical scheme for stabilizing the calorific power of gas in supply systems. Sbor. nauch. trud. Kuib. indus. inst. no.8: 251-258 59. (MIRA 14:7)
(Gas distribution) (Gas research)

BOGOMOLOV, V.D. [Bohomolov, V.D.]; KAZAKOV, N.I.; LINOV, G.Ye. [Linov, H.E.]; FADEYEV, I.F. [Fadieiev, I.F.]; VOINOV, I.P.; ZVYAGIN, S.D. [Zv'iahin, S.D.]; CHUDNOVSKIY, P.I. [Chudnovs'kyi, P.I.]; ROMANCHENKO, V.M.

In the economic councils of the Ukraine. Leh.prom. no.3:84-87 Jl-S '63. (MIRA 16:11)

1. TSentral'noye byuro tekhnicheskoy informatsii Moskovskogo gorodskogo soveta narodnogo khozyaystva (for Bogomolov, Kazakov, Linov, Fadeyev).

BOGOMOLOV, V.G.

Basic problems of the geology of the right bank of the Greater Yenisey in the Uyuk-Sistig-Khem interfluve. Inform. sbor. VSEGEI no.6:77-85 '59. (MIRA 13:12)
(Yenisey Valley--Geology)

BOGOMOLOV, V.G.

Stratigraphy of Ordovician and Silurian sediments of the northeastern part of Tuva. Inform.sbor.VSEGEI no.21:39-46 '59. (MIRA 14:12)
(Tuva Autonomous Province--Geology, Stratigraphic)

TIMOFEYEVA, Ye.A.; SMIRNOV, V.S.; BOGOMOLOV, V.I.

Dehydrogenation of n-octane and of the 250-320° synthine fraction in the presence of activated charcoal. Izv. AN SSSR. Otd.khim.nauk no.7:1320-1325 Jl '61. (MIRA 14:7)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Octane) (Dehydrogenation)

S/204/62/002/002/001/007
I060/I242

AUTHORS: Minachev, Kh.M., Markov, M.A., and Bogomolov, V.I.

TITLE: Conversion of cyclohexane and n alkanes on rare earth oxides

PERIODICAL: Neftekhimiya, v.2, no.2, 1962, 144-149

TEXT: This work is a continuation of the investigation of the catalytic effect of oxides of rare earth elements on dehydrogenation and dehydrocyclization of hydrocarbons. Neodymium, holmium, and yttrium oxides on activated carbon have shown a high activity in the dehydrogenation of cyclohexane and in dehydrocyclization of n alkanes. When the concentration of Nd_2O_3 in the catalyst increases from 0.5 to 5%, the output of benzene from cyclohexane at 500° grows from 19.6 to 49.4%, while higher concentrations of oxide up to 15% do not produce

Card 1/2

S/204/62/002/002/001/007
I060/I242

Conversion of cyclohexane...

any noticeable increase of output of benzene. The gaseous products of catalysis wer analyzed in a XT-2M (KhT-2M) unit; the liquid products were analyzed by gas-liquid chromatography. There are 4 figures and 4 tables.

ASSOCIATION: Institut organicheskoy khimii AN SSSR im. N.D. Zelinskogo (Institute of Organic Chemistry im. N.D. Zelinskiy, AS USSR)

SUBMITTED: January 25, 1961

Card 2/2

BABADZHAN, A.A., kand. tekhn.nauk; BOGOMOLOV, V.I., inzh., retsenzent; BULATOV, V.D., inzh., retsenzent; VETRENKO, Ye.A., kand. tekhn. nauk, red.; VETRENKO, Ye.A., kand. tekhn. nauk, red.; LUCHKO, Yu.V., red.izd-va; KOVALENKO, N.I., tekhn. red.

[Innovators' practce in the copper smelting industry of the Urals] Opyt novatorov medeplavil'noi promyshlennosti Urala. Pod red. E.A.Vetrenko. Sverdlovsk, Metallurgizdat, 1953. 133 p. (MIRA 16:8)
(Ural Mountain region--Copper industry)

BOGOMOLOV, V.I.

SYCHEV, Aleksey Yakovlevich, professor, doktor ekonomicheskikh nauk; DUMLER, Sergey Avgustovich, inzhener; SIVKOV, Viktor Mikhaylovich; UMANSKAYA, M.M., inzhener, redaktor; GOHELIK, I.G., kandidat ekonomicheskikh nauk, redaktor; BOGOMOLOV, V.I., inzhener; KARCHEVSKIY, V.A., inzhener, redaktor; PEKELIS, I.B.; POLYAKOV, S.A., inzhener; SHTEYMBERG, Ye.S.; CHURILOVICH, L.M.; AVRUTSKAYA, R.F., redaktor; EVENSON, I.M., tekhnicheskiy redaktor.

[The economics of non-ferrous metallurgy] Ekonomika tsvetnoi metallurgii. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 291 p. (MLRA 8:2)
(Nonferrous metals--Metallurgy) (Metal industries)

BAKIROV, Urkhan Khakimzhanovich; KRUTOVSKIKH, Nikolay Dmitriyevich; SIDOROV, Pavel Sidorovich; BOGOMOLOV, V.I., inzhener, retsenzent; BUBOK, K.G., redaktor; YEZDOKOVA, M.L., redaktor; EVENSON, I.M. tekhnicheskiy redaktor

[Ventilating overheated sections in copper pyrite mines] Opyt provetrivaniia razogretykh uchastkov mednokolchedannykh shakht. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii , 1955. 46 p. (MLRA 8:10)
(Mine ventilation) (Chalcopyrites)

GORODETSKIY, P.I.; POPOV, G.N.; SHABLYGIN, A.I.; BOGOMOLOV, V.I.; GALAYEV, N.Z.; PANENKOV, Yu.I.

Method of working the Nikolaevskiy deposit. Gor.zhur. no.3:15-21 Mr '60. (MIRA 14:5)
(Nikolaevskiy (Ural Mountain region)—Mining engineering)

GRISHIN, G.T., gornyy inzh.; TYURYAKOV, A.F., gornyy inzh.; BOGOMOLOV, V.I.

Continuously improve the technical and economic indices of mine operations. Gor. zhur. no.5:3-5 My '64.
(MIRA 17:6)

1. Sovet narodnogo khozyaystva SSSR (for Tyuryakov).
2. Gosplan SSSR (for Bogomolov).

BOGOMOLOV, V.I., arkhitektor; LUR'YE, L.L., inzh.

Principles of making designs and plans for industrialized housing construction. Stroi.prom. 27 no.3:3-6 Mr '49. (MIRA 13:2)

(Architecture--Designs and plans)

Богомолов В.И.

BOGOMOLOV, V.I.

New standard plans for mass housing construction. Stroi.prom.33 no.6:1-7 Je'55. (MIRA 8:10)

1. Institut Gosudarstvennogo tresta po proyektirovaniyu rabochikh gorodov, poselkov, uchebnykh zavedeniy i kul'turno-prosvetitel'nykh uchrezhdeniy tyazheloy promyshlennosti.
(Apartment houses)

BOGOMOLOV, V.I.

Results of the competition for new plans for apartment houses for mass building. Stroi.prom. 35 no.2:11-17 F '57. (MLRA 10:3)

1. Institut Gosudarstvennogo tresta po proyektirovaniyu rabochikh gorodov, poselkov, uchebnykh zavedeniy i kul'turno-prosvetitel'nykh uchrezhdeniy tyazheloy promyshlennosti.
(Apartment houses)
(Architecture--Designs and plans--Competition)

BOGOMOLOV, V.I.

Effect of planning decisions on the shortening of the duration of residential construction. Trudy MIEI no.15:38-44 '61.
(MIRA 14:12)

1. Glavnyy inzh. proyektnogo instituta Gosudarstvennogo tresta po proyektirovaniyu zhilykh i obshchestvennykh zdaniy, ikh oborudovaniya i blagoustroystva naselennykh mest.
(Apartment houses)
(Construction industry)

MINACHEV, Kh.M.; MARKOV, M.A.; BOGOMOLOV, V.I.; ENGLINA, F.E.

Transformation of cyclic alcohols on neodymium oxide. Izv.AN SSSR. Ser.khim. no.1:13-17 Ja '64. (MIRA 17:4)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

LEVITSKIY, I.I.; GONIKBERG, M.G.; MINACHEV, Kh.M.; BOGOMOLOV, V.I.

Change of rate and direction of hydrogenolysis of methylcyclopentane in the high-temperature hydrogen treatment of an alumina-platinum catalyst. Dokl. AN SSSR 158 no.5:1123-1126 O '64. (MIRA 17:10)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR. Predstavleno akademikom B.A.Kazanskim.

LEVITSKIY, I.I.; UDAL'TSOVA, Ye.A.; BOGOMOLOV, V.I.

Change in the hydrogenating and isomerizing activity of chromic oxide in the purification of catalysts by removing oxygen and water. Izv.AN SSSR.Ser.khim. no.9:1691-1693 S '64.
(MIRA 17:10)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

BOGOMOLOV, V.I., kandidat tekhnicheskikh nauk.

Frequency stability of klystron generators. Tekh.televid.no.5:29-34 '55. (MLRA 10:2)

(Klystrons) (Oscillators, Electron-tube)

Bogomolov, V. I.

112-2-4563

TRANSLATION FROM: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 2, p. 300 (USSR)

AUTHOR: Bogomolov, V. I.

TITLE: The ПТС Wire Broadcasting Line for Simultaneous Transmission of the Image and Accompanying Sound (Radioliniya PTS dlya odnovremennoy peredachi izobrazheniya i zvukovogo soprovozhdeniya)

PERIODICAL: Tekhnika televideniya (M-vo radiotekhn. prom-sti SSSR), 1955, Nr 9 (15), pp. 3-15.

ABSTRACT: VNII has developed a line which serves for ПТС communication with the telecast station receiver instrument room. The line has a channel for the image signal and a channel for the accompanying sound signal. Both channels are frequency modulated. The image transmitter and accompanying sound transmitter each have a power of 100 mw. The operating passband-frequency channel is 6.5 mc for black-and-white television, 12.6 mc for color television and 50 to 15,000 cycles for accompanying sound. During transmission, the indices of modulation are 0.6 to 1.0 for black-and-white television, 0.6 for color television and not

Card 1/2

The TC Wire Broadcasting Line for Simultaneous (Cont.) 112-2-4563

less than 10 for accompanying sound. For a temperature change of -30 to + 40°, the relative frequency drift of the image signal transmitter is 2·10-3. The maximum total amplitude of the image signal at the modulator input is 5 v. The transmitters require a power of 420 va. The transmitters operate on a single double polarization antenna. The antenna is a paraboloid 150 cm in diameter. At the half-power points the antenna radiation pattern is 5.3° wide. The power factor is 580. The antenna transmission band is 40 mc for image signals, and 30 mc for sound signals. Nominal value of intermediate frequency is 150 mc for television and 30 mc for sound. Maximum output voltages are 1.25 v (total amplitude) for the image signal and 0.5 v (effective) for the sound signal. The signal-to-noise ratio in the channels when the distance between transmitter and receiver is 20 km is 42 db for television and 54 db for sound. The operation of the basic units of the line is discussed. A wiring diagram and photographs of the wire broadcasting line are given as well as the results of system tests during the transmission of black-and-white and color television at various distances from the telecast station.

Card 2/2 V.A.K.

BOGOMOLOV, V.K.

Uchet i kal'kuliatsiia v molochnoi promyshlennosti (Accounting and compulation in the dairy industry). Moskva, Pishchepromizdat, 1953. 176 p.

SO: Monthly List of Russian Accessions, Vol. 7, No. 5, August 1954

BOGOMOLOV, V.K.; YAKOVLEV, K.K., spetsred.; MOROZOVA, I.I., red.; GOTLIB, E.M., tekhn.red.

[Accounting and analysis of the management of enterprises in the dairy industry] Bukhgalterskii uchet i analiz khoziaistvennoi deiatel'nosti predpriiatii molochnoi promyshlennosti. Moskva, Pishchepromizdat, 1958. 282 p. (MIRA 12:6)
(Dairy industry--Accounting)

ACC NR: AP6011660 SOURCE CODE: UR/0020/66/167/003/0610/0612

AUTHOR: Voskoboynikov, I. M.; Bogomolov, V. M.; Margolin, A. D.; Apin, A. Ya.

ORG: Institute of Chemical Physics, Academy of Sciences SSSR (Institut khimicheskoy fiziki Akademii nauk SSSR)

TITLE: Determination of decomposition times of explosives in a shock wave

SOURCE: AN SSSR. Doklady, v. 167, no. 3, 1966, 610-612

TOPIC TAGS: explosive, explosion, shock wave, kinetics

ABSTRACT: The purpose of this work was the measurement of the decomposition time of liquid nitromethane, liquid tetranitromethane, and monocrystalline hexogen [RDX] under the influence of a flat shock wave, using the experimental arrangement shown in Figure 1:

Card 1/4 UDC: 534.222.2+541.427.6

L 21853-66

ACC NR: AP6011660

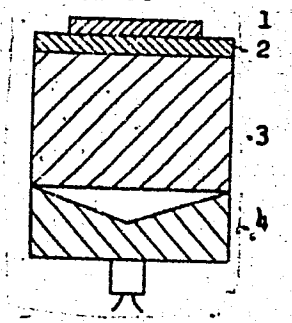


Fig. 1. Experimental arrangement

1 - The explosive investigated; 2 - metallic plate; 3 - active charge; 4 - lens for orthogonalization of the wave front.

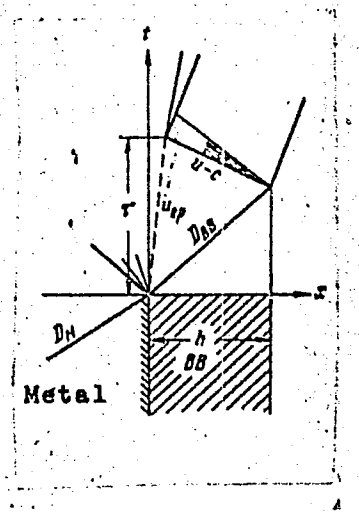
The occurrence of the reaction initiated by passage of the shock wave is accompanied by explosion; the flash is registered photographically. When no flash is observed, it is assumed that the reaction time is longer than the time required for passage of the shock wave and return of the rarefaction wave through the layer of the investigated substance. For each wave intensity there exists a layer thickness for which an explosion will still occur. The results of the critical thickness h_{cr} measurements are given in the table:

Card 2/4

P, kbar	H_{cr}, mm	τ, μsec
Monocrystalline hexogen		
170	2,98±0,5	1,00
175	2,38±0,10	0,68
180	1,86±0,10	0,47
190	1,18±0,05	0,33
195	1,1±0,05	0,30
Nitromethane		
86	7±0,5	2,54
90	4±0,5	1,42
93	3±0,5	1,05
99	2±0,5	0,67
104*	0,5±0,25	0,33*
Tetranitromethane		
108	3,5±0,5	1,24
111	1,0±0,25	0,35
116	0,5±0,25	0,20

P = 86 kbar; τ = 2.26 μsec;
P = 89 kbar; τ = 1.74 μsec
for nitromethane.

Fig. 2. Schematic representation



Card 3/4

L 21853-66
ACC NR: AP6011660

The decomposition time τ is calculated from

$$\tau = \frac{h_{cr}}{D}\left(\frac{D+c-u}{c}\right),$$

where D is the velocity of the shock wave; c is sonic velocity; and u is the mass flow behind the shock wave (see Fig. 2). Analysis showed that for the given accuracies of h_{cr}, and without increasing the error by more than 5%, it can be assumed that D = c, and

$$\tau = \frac{h_{cr}}{D}\left(2-\frac{u}{D}\right).$$

The decomposition of explosives is undoubtedly influenced by temperature to a greater extent than by pressure, so that future investigations should be directed at this area. Orig. art. has: 2 figures and 1 table. [VS]

SUB CODE: 19/ SUBM DATE: 29Jun65/ ORIG REF: 002/ OTH REF: 002
ATD PRESS: 4227

Card 4/4 mst

L 45816-66 EWT(m)/T DJ/WE

ACC NR: AP6020392 (A) SOURCE CODE: UR/0204/66/006/001/0112/0114

AUTHOR: Sanin, P. I.; Chernyavskaya, L. F.; Sher, V. V.; Komissarova, N. I.; Bogomolov, V. M.

ORG: Institute of Petrochemical Synthesis im. A. V. Topchiyev, AN SSSR (Institut neftekhimicheskogo sinteza AN SSSR)

TITLE: Apparatus for oxidizing organic liquids with automatic compensation for consumed oxygen and its recording

SOURCE: Neftekhimiya, v. 6, no. 1, 1966, 112-114

TOPIC TAGS: chemical laboratory apparatus, oxidation kinetics

ABSTRACT: A circulation-type unit was constructed for the liquid-phase oxidation of organic liquids (hydrocarbons, lubricating oils and other petroleum products) at various temperatures and atmospheric pressure, with automatic recording and compensation for the oxygen consumed in the reaction. The unit is convenient to operate and gives reproducible results. It can be used for studying the oxidation kinetics of hydrocarbons (and other compounds), for determining the stability of petroleum products, and for the comparative evaluation of the effectiveness of various antioxidants. Experimental data showed that the unit can be used to obtain kinetic data over a wide range of oxidation rates (oxygen absorption rates). Orig. art. has: 3 figures.

SUB CODE: 07/ SUBM DATE: 12Mar65/ ORIG REF: 001/ OTH REF: 001

Card 1/1 UDC: 542.943.084

BOGOMOLOV, V.N.

USSR/Electronics - Semiconductor Devices and Photocells, H-8

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35189

Author: Bogomolov, V. N.

Institution: None

Title: Certain New Types of Instruments Employing Semiconductors (New Utilization of the Hall Effect)

Original Periodical: Zh. tekhn. fiziki, 1956, 26, No 3, 693-694

Abstract: A brief description of new possibilities of solving certain radio technical problems by using the galvanomagnetic effects in semiconductors. Certain devices, in which the Hall effect is used, are proposed: (1) ideal square-law detector; (2) ideal linear detector; (3) frequency spectrum analyzer. It is shown that for a specimen made of Germanium, the detector sensitivity is one mv, and for a specimen made of InSb is one mv. The experimental relationships $U_{out} = f(U_{in})$ are given for the linear and square-law detectors. The voltage spectrum at 200 cycles of the 3 G-10 generator, obtained with an analyzer made with Germanium, is also given.

Card 1/1

BOGOMOLOV, V.N.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1682
AUTHOR BOGOMOLOV, V.N.
TITLE A Parallel Current Amplifier with a Transformer which is based upon the Modification of the Resistance of Semiconductors in a Magnetic Field.
PERIODICAL Žurn.techn.fis, 26, fasc.11, 2480-2486 (1956)
Issued: 12 / 1956

After semiconductors characterized by a great mobility of current carriers (50.000-80.000 $cm^2/V.sec$) were obtained in the course of recent years, a real possibility offered itself for the utilization in practice of the galvanomagnetic effects occurring in these semiconductors. The present work discusses one of the possibilities of modifying the resistance of the semiconductor in a magnetic field.
At first the contact-less modulator is discussed. A semiconductor in a magnetic field H modifies its resistance Q synchronously with the field. The increase ΔQ of resistance depends on the properties of the substance and on the strength of the magnetic field. In the case of weak fields it applies that $\Delta Q = QAH^2$, where the constant A depends upon the substance used. If, on this occasion, the semiconductor Q is used as a load for a certain electromotoric force E, the current, which flows in a circle, is modified synchronously with the resistance of the semiconductor. The problem consists in determining the equation $U = Ir$ which belongs to the corresponding equivalence scheme (on which occasion it applies that $rtQ = R$), and r denotes the resistance from which the modulated

voltage is taken. For practical purposes it suffices to use only a harmonic of the amperage, which fact was proved by experiment. By confining oneself to two harmonics in the FOURIER development, a sufficiently accurate solution is obtained. Detection is then discussed. After the parallel current is successfully transformed into alternating current, the latter must, after suitable amplification, be re-transformed into parallel current. This is possible by means of an ordinary detector, but without maintaining linearity. If, however, a detector that is based upon the HALL effect is used, linearity is conserved for any amplitude. The advantage offered by such parallel current amplifiers is the lack of zero-drive and inertia. The maximum transformation coefficient from parallel- into alternating current amounts to ~ 30%.

Experimental results: In practice, the amplifier differed but little from the above mentioned scheme. The amplified alternating voltage was detected by means of a phase-sensitive detector on the basis of the HALL effect. By carefully screening-off the individual blocks it was possible to reduce the amplification threshold by at least one order of magnitude. All donors consist of monocrystalline InSb, and nearly all magnetic conductors of the donors and transformers are of ferrite. In conclusion, the donors and the technology of their production are described.

INSTITUTE:

AUTHOR BOGOMOLOV, V.N., ILISAVSKIJ, JU.V., KORNFEL'D, M., SOCAVA, L.S., STRUNIN, R.I. PA - 2188

TITLE Germanium Bolometers with little Inertia (Russian).

PERIODICAL Zhurnal Tekhn.Fiz., 1957, Vol 27, Nr 1, pp 213-215 (U.S.S.R.)

Received 2/1957 Reviewed 3/1957

ABSTRACT In the course of the last ten years a considerable number of works on semi-conductor-bolometers was published. The sensitive layers of all these bolometers were obtained by means of roasting different combinations of oxydes of certain metals (Mn, Ni, Co). The technology of the production of such samples is complicated and makes possible the production of films of a minimum thickness of the order of magnitude of 10 microns. However, for the production of bolometers of little inertia films of a thickness of 1 micron or even less would be useful. The easiest method for the production of thin layers is vaporization in the vacuum, especially in the case of elementary materials. The authors used this method for the production of a bolometer with a sensitive layer of germanium. Germanium can easily be vaporized in the vacuum at the temperature of ~ 1200°C and the temperature coefficient of resistance is sufficiently high. Germanium was steamed on to a base of mica having a thickness of 30 micron. Onto the carefully purified surface 30 pairs of silver contacts were steamed on in the vacuum by means of a stencil. Next, 30 germanium layers were sprayed through another stencil. The steaming on of the germanium took 10 to 20 minutes, and immediately after the spraying the germanium films were covered with polystirol lac. The mica plate was then cut into

Card 1/2

Germanium Bolometers with little Inertia.

30 parts and the individual sensitive elements were then stuck onto bases of copper which warrant the heat transfer necessary for the diminution of the eigen-time. The sensitive element was finally carefully shut off hermetically. The sensitive spot had the size of 1 x 1 mm and the thickness of 1 to 3 micron, its resistance amounted to 1 - 3 mOhm. Temperature coefficient of the resistance of the sensitive layer was 25.10^{-3} degree^{-1}. The main characteristics of the bolometer were measured at the feed voltage of 160 V. The signal was taken from a load resistance connected in a series with the bolometer. A black body heated to 100°C served as radiation source and the radiation flux was modulated sinusoidally. At a modulation frequency of 30 c the sensitivity of the bolometer was 60-70 Watt (Sensitivity means the ratio between the amplitude of the signal in volts and the amplitude of the variable component of the flux of radiation in Watts). Finally, the noise and the eigentime of the bolometers are given. The main advantage of germanium compared with oxyde semi-conductors is the possibility of producing very thin layers (of an order of magnitude of one micron and less).

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Card 2/2

AUTHOR: ~~BOGOMOLOV,V.N.~~, VASIL'YEV,V.D. PA - 2120

TITLE: The Attempt made to use the Linear Detector with Hall's Effect for purposes of Measuring. (Opyt primeneniya lineynogo detektora na effekte kholla dlya izmeritel'nykh tseley, Russian).

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 2, pp 260 - 261 (U.S.S.R.)
Received: 3 / 1957 Reviewed: 3 / 1957

ABSTRACT: The ordinary tube- or semiconductor detectors result in no linear transformation in any amplitude interval and are not phase-sensitive. The detector with Hall's effect is free from these shortcomings. Its working principle is based on the fact that Halls effect is proportional to the product of the size of the magnetic field and amperage. Such a detector was also used in a system for the measuring of Hall!s effect in alternating current, where an alternating voltage with a frequency of 20 c was to be measured. The complete scheme of this system is shown. A second illustration shows the block scheme of the detector. The following advantages of the detector with Hall's effect can be mentioned: Linearity of the recordings of the scheme in the case of any amplitudes of the signal to be measured, the possibility of determining the sign of Hall's effect on the sample, the elimination of influences in connection with the

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205920018-4"

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The Attempt made to use the Linear Detector with Hall's Effect for purposes of Measuring.

directioning at frequencies differing from signal frequency. (2 illustrations).

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AUTHOR: BOGOMOLOV, V.N. PA - 2791

TITLE: Galvanomagnetic Generators. (Gal'vanomagnitnyye generatory, Russian).

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 4, pp 663 - 674 (U.S.S.R.)
Received: 5 / 1957 Reviewed: 6 / 1957

ABSTRACT: In the present paper the application of galvanomagnetic effects in semiconductors for the purpose of the generation of electric oscillations is discussed and it is shown that such generators can attain a fairly high degree of efficiency. First, a generator working on the basis of the Hall-effect is discussed. It appears that this generator can work only in class A and that therefore its efficiency is limited to low values, and that the generator is not advantageous from the viewpoint of energetics. Next, a generator based on an effect of resistance change is investigated.
In spite of the arguments made in the present paper, there is no reason to maintain that galvanomagnetic generators operating with an efficiency greater than 37,5 % are possible. These generators are interesting because they can easily be produced, are small, reliable, and have a long life.
For the production of such generators materials with a high degree of mobility of current carriers should be used. It should be possible to obtain resistance changes of the order of magnitude 4 - 10 in

Galvanomagnetic Generators. PA - 2791

a real magnetic field with the field strength H_0. Such materials are already available as e.g. InSb. From the conditions for self-excitation and from the expression for the efficiency of the generator it can be seen that the generating frequency can be arbitrary, because it does not occur in these formulae. From physical considerations, however, the magnetic conductor must make it possible to add the magnetic d.c. and a.c.
(8 illustrations).

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Bogomolov, V.N.

57-6-9/36

AUTHOR: BOGOMOLOV, V.N., MYASNIKOV, V.A.

TITLE: Apparatus for the Hall Effect Measurements in Semiconductors (Ustanovka dlya izmereniya effekta Kholla v poluprovodnikakh. Russian)

PERIODICAL: Zhurnal Tekhn. Fiz. 1957, Vol 27, Nr 6, pp 1209 - 1214 (U.S.S.R.)

ABSTRACT: Of three basic methods: method of the constant magnetic field and of direct current, method of the constant field and of alternating current, and method of the alternating field and alternating current, the latter is investigated here. According to this method the Hall-e.m.f. is measured in the case of sum- and difference frequency. It is the difference between the intelligence signal and the disturbance in relation to the frequency that constitute the advantage of this method over others. In realizing these advantages the following difficulties develop: 1.) The component with the frequency ω_H of the magnetic field must not be contained in the current with the frequency ω_1. 2.) The amplifier must have a narrow band pass. The first-mentioned difficulty can be overcome if the generator is fed from d.c. sources and if it is carefully screened off. The second-mentioned difficulty can not be overcome so easily. The authors built and computed an apparatus with low-ohm patterns. The frequency of the current was 75 c, the frequency of the magnetic field was 50 c. The Hall e.m.f. was measured at a frequency of 25 c. Thus it was possible to avoid both difficulties to a certain extent. In

Card 1/2

57-6-9/36

Apparatus for the Hall Effect Measurements in Semiconductors

order to reduce the flickering of the frequency at 25 c, where the Hall-e.m.f. develops, the generator- and magnetic field frequencies were synchronized. A description of the apparatus, of the generator and of the amplifier follows. (With 5 illustrations and 2 Slavic references).

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Bogomolov, V.N.

99-58-6-2/11

AUTHOR: Bogomolov, V.N., Zaydman, Ya.D. and Kondrashenko, A.K. Engineers

TITLE: The Lining of Canals With Concrete and Reinforced Concrete (Oblitsovka kanalov betonom i zhelezobetonom)

PERIODICAL: Gidrotekhnika i Melioratsiya, 1958, Nr 6, pp 7-20 (USSR)

ABSTRACT: In the Trans-Caucasian Soviet Republics (Azerbaydzhan, Armenian and Georgian SSR), several tests have been carried out on the concreting of irrigation canals. The North Donets-Donbass Canal in the Ukrainian SSR is now being lined with reinforced concrete. Considering the various conditions of irrigation systems and the peculiarities of prefabricated canal lining structures (especially the extent of seams, the great demand for fitting steel, increased stability, etc) the construction of linings of monolithic and reinforced concrete proved to be the best solution for concreting main canals. The type of canal lining used in the main canal of the Apsheron irrigation system, having longitudinal seams sealed with tar-coated planks, did not prove to be as reliable as the anti-filter type construction. The construction of marker-type linings (Arzni-Shamiram irrigation system), without longitu-

Card 1/2

The Lining of Canals With Concrete and Reinforced Concrete 99-58-6-2/11

dinal seams and reliable sealings of all diametrical seams, is a new development which has not yet been sufficiently tested. In the Upper Samgori irrigation system, studied in 1956-57 by scientists of the Georgian Water Engineering and Reclamation Institute, single-layer concrete linings (type 4) proved to be excellent for water-resistant soils while double-layer linings (type 2, 3, 3a) were found to be excellent for non-water-resistant soils subject to deformations. The construction of linings in the North Donets-Donbass Canal is characterized by an innovation - the sealing of the seams with rubber, and especially the use of profile rubber in monolithic linings. In order to apply labor-saving measures in the future construction of monolithic linings, and to improve their structure, it is absolutely necessary to build machines for complex mechanization of the process of lining with monolithic concrete and reinforced concrete. At the same time research work is to be continued on more efficient and economical linings made up of concrete and reinforced concrete tending to apply pre-stressed fittings. There are 19 photos, 2 figures and 4 tables.

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Card 2/2 1. Canals-Maintenance 2. Concrete-Applications

99-58-7-2/10

AUTHOR: Bogomolov, V.N., Zaydman, Ya.D. and Kondrashenko, A.K., Engineers

TITLE: The Lining of Distribution Canals of Irrigation Systems (Oblitsovka raspredelitel'nykh kanalov orositel'nykh sistem)

PERIODICAL: Gidrotekhnika i melioratsiya, 1958, Nr 7, pp 5-15 (USSR)

ABSTRACT: In October and November 1957, the authors of this article studied the canal linings of the following irrigation systems: Apsheron (Azerbaydzhan SSR); Arzni-Shamiramskaya (Armenian SSR) and Verkhne-Samgorskaya (Georgian SSR); and arrived at the following conclusions: The lining of canals with small, lightweight, prefabricated plates (Apsheron irrigation system) is not an effective measure against filtration. Such a structure has a great number of longitudinal and diametrical seams, and the laying of the liner plates represents a problem. The linings of canals of the Verkhne-Samgorskaya irrigation system consisting of prefabricated concrete troughs of a semicircular profile (0.7 m in length), having a great number of seams and borders of monolithic concrete, are subject to deformations and consequently the loss of water from these canals is considerable. The construction of linings consisting of prefabricated concrete

Card 1/2

troughs of trapezoidal (1.4 m long) and semicircular (1.4 - 2 m long) profiles, as used for the Arzni-Shamiram and Kotay irrigation systems, is of greater practical value because of the increased length of the troughs. However, the reliability of this construction (without fittings) is as yet untested. Prefabricated reinforced concrete troughs of a length of 3-4 m might prove to be an efficient lining structure for distribution canal systems. For the manufacture of these troughs, standardized products (polygons) must be designed by using the experience of "Armvodstroy" in manufacturing semicircular troughs of a length of 2 m in the Kotaykskiy Plant in Elar. The new technology of manufacturing prefabricated, thin-walled, curvilinear products from concrete and reinforced concrete by a combined bending and molding method, as suggested by A.K. Shanshiyev, is of great interest in this connection. The first experiments on this project were started in 1957 by the GruzNIIGiM and the ArmNIIGiM.
There are 12 photographs, 1 table and 3 diagrams.

1. Irrigation systems -- USSR 2. Canals -- Maintenance