

BOROVINSKIY, A.I.

Surgical treatment of chronic spontaneous pneumothorax.
Probl. tub. 41 no.3:45-50'63. (MIRA 16:9)

1. Iz Nobosibirskogo nauchno-issledovatel'skogo instituta
tuberkuleza (dir. - kand.med.nauk M.V.Svirezhev).
(PNEUMOTHORAX) (LUNGS—SURGERY)

BOROVINSKIY, A.I.

Restorative surgery in pleural fibrosis patients. Probl. tub. 41
no.11:86-88 '63. (MIRA 17:9)

1. Iz Novosibirskogo nauchno-issledovatel'skogo instituta tuberkuleza
(dir. - zasluzhennyy vrach RSFSR kand.med.nauk M.V.Sverezhev)
Ministerstva zdravookhraneniya RSFSR.

Borovinskiy, B.A.
BOROVINSKIY, B.A.

Determining the velocity of ice within the glacier mass by geophysical
methods. Vest. AN Kazakh. SSR 13 no.12:56-60 D '57. (MIRA 11:1)
(Tuyuk-Su Mountains--Glaciers)

BOROVINSKIY, B.A.

Using geophysical methods in investigating the structure of
the Tuyuksu glacier. Vest. AN Kazakh. SSR 14 no.5:40-44 My '58.
(MIRA 11:7)

(Fergana--Glaciers)

3(8)

SOV/31-59-2-4/17

AUTHOR:

~~Borovinskiy, B.A.~~

TITLE:

Investigation of the Moraines of the Malaya Almatinka
Glaciers of the Trans-Ili Ala-Tau with Electrical
Prospecting Methods (Issledovaniye moren Maloal-
matinskikh lednikov zailiyskogo Alatau metodami
elektrorazvedki)

PERIODICAL:

Vestnik Akademii nauk Kazakhskoy SSR, 1959, Nr 2,
pp 31-37 (USSR)

ABSTRACT:

This is a report of an investigation of the struc-
ture of the moraines of the Malaya Almatinka Glaciers of
the Trans-Ili Alatau carried out by the Trans-Ili
Glacier Expedition of the AS of the Kazakh SSR with-
in the program of the International Geophysical Year.
It was accomplished with electric prospecting methods,
by which means the inner structure was to be de-
termined together with measurement of the deposits,
the contours of buried ice and sections of chrono-
logically remote congelation, thermo-karst cavities

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Investigation of the Moraines of the Malaya Almatinka Glaciers of the Trans-Ili Alatau With Electrical Prospecting Methods

and the chronological structure of the vertical section of the moraines. The technique used was to establish an electric field - regarding the front moraine of the Molodëzhnyy Glacier, a natural electric field was used - vertical electric probing and electric profiling. In view of the considerable specific electric resistances of the rocks, investigation was carried out with weak currents, which on potentiometer EP-1 could only be recorded via a special additional resistance of 100 and 10 ohm/m, successively switched into the feeding circuit. The author is convinced that the use of geophysical prospecting methods and, in particular, electric prospecting, provides data which cannot be obtained otherwise. He expresses his gratitude to the Academician of the KazakhAS N.N. Pal'gov, K.G. Voynovskiy-Kruger,

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SCV/31-59-2-4/17

Investigation of the Moraines of the ~~Malaya Almatinka~~ Glaciers of the
Trans-Ili Alatau With Electrical Prospecting Methods

and K.G. Makarevich for helping him with the project.
There are 4 diagrams and 5 references, 3 of which are
Soviet, 1 German, and 1 French.

Card 3/3

BOROVINSKIY, B. A. ^{Cand} ~~████~~ Tech Sci -- "Study of the ^{ices} Zailiyskiy-Alatau ^{glaciers of} ~~glaciers~~ by
geophysical methods." Mos, 1960 (Acad Sci USSR. Inst of Permafrost Studies in
V. A. Obruchev). (KL, 1-61, 191)

BOROVINSKIY, B. A.

Measuring the thickness of the Shumskiy glacier. Vest. AN Kazakh.
SSR 16 no. 7:102-103 J1 '60. (MIRA 13:8)
(Shumskiy glacier)

S/031/60/000/011/008/008
A161/A133

AUTHOR: Borovinskiy, B. A.

TITLE: Geophysical investigation of the main large Alma-Ata glacier

PERIODICAL: Akademiya nauk Kazakhskoy SSR, Vestnik, no. 11, 1960, 108 - 109

TEXT: Otdel geografii AN KazSSR (Geographic Department of the AS KazSSR) has investigated the ice depth in the Glavnyy Bol'shealmaatinskiy lednik (Main Large Alama-Ata glacier) in 1960, using electric, seismic and magnetic methods. The seismic measurements were carried out with direct and reverse hodograph and a space of 25 m between receivers, the magnetic by feeling along and across the glacier, and electrical by combined and dipole sounding. The determined cut along the axis of the right glacier branch is shown in the figure. The maximum ice depth in spots is 130 m. The seismic wave propagation velocity 5,200 m/sec on the ice-bottom boundary indicated that the glacier's bottom consists of a granite mass without any considerable accumulations of moraines under the ice. The seismographic and electric measuring results were fairly close. The physical and mechanical ice properties were determined by waves propagation velocities. The Poisson coefficient σ , shift module μ and Young module E were calculated; the

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Geophysical investigation of the main large Alma-Ata... S/031/60/000/011/008/008
A161/A133

ice density was assumed 0.9 g/cm^3 . The ice properties were stated to vary gradually with the distance from the névé at the glacier's end. Some anomalous Poisson coefficient values may be explained by the presence of spots with different density, porosity, and air saturation. The depth of the left glacier branch was determined electrically only and stated to reach 90 m in the middle of the axis. The calculation results matched the ice depth values determined by trigonometric method. Academician N. N. Pal'gov of the AS KazSSR carried out the calculations. The results show the volume of water held in the glacier. The conclusion was drawn that the combination of electrical and seismic methods is the most convenient way for determining the capacity of glaciers, and that dipole-radial sounding is to be preferred to the combined method on glaciers with ice depth over 100 m. There is 1 figure.

Card 2/3

BOROVINSKIY, Boris Aleksandrovich; AVSYUK, G.A., otv. red.;
ZHITNIKOVA, S.A., red.; MATYUKHINA, L.I., tekhn. red.

[Collection of articles] Sbornik statei. Moskva, Izd-vo AN SSSR. Nos.10, 5. [Exploration of the Trans-Ili Alatau by geophysical methods] Izuchenie lednikov Zailiiskogo Alatau geofizicheskimi metodami. 1963. 111 p.

(MIRA 16:10)

1. Akademiya nauk SSSR. Mezhduverdomstvennyy komitet po provedeniyu Mezhdunarodnogo geofizicheskogo goda. IX i XII razdely MGG: Glyatsiologiya i seysmologiya. 2. Chlen-korrespondent AN SSSR (for Avsyuk).

(Trans-Ili Alatau--Glaciological research)

BOROVINSKIY, L. A.

USSR/Physics - Electron Spectra,
Aromatic Compounds 1 Aug 52

"Electron Spectra of Aromatic Compounds," M.V. Vol'kenshteyn, L.A. Borovinskiy, Leningrad State University, and Novgorod Teachers' Institute of Borovichi

"Dok Ak Nauk SSSR" Vol 85, No 4, pp 737-740

States that aromatic compounds represent systems with especially considerable interaction of pi-electrons. Notes that the properties of these systems can be understood only by proceeding from the profound ideas of "averaged" mutual influence of atoms,

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which were expressed for the first time by Butlerov and Markovnikov in 1870's. Proposes that a semi-quant theory of electron spectra of aromatic compounds can be constructed on the basis of a model of potential well just as in quantum mechanics. Submitted by Acad A.N. Terenin 10 Jun 52.

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BOROVINSKIY, L. A.

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USSR/Physics - Susceptibility

11 Aug 52

"Anisotropy of Diamagnetic Susceptibility of Benzol, Naphthalene, and Anthracene," M. V. Vol'kenshteyn and L. A. Borovinskiy; Leningrad State U and Novgorod Teachers Inst, Borovichi

"DAN SSSR" Vol 85, No 5, pp 977-980

Derive new calcns based on the application of an elementary phys model of an electron in a potential well, which is a graphic visual method. State that in future computations it will be necessary to take into consideration the nonequivalence of all the bonds in condensation aromatic compds. Submitted by Acad A. N. Terenin 13 May 52.

249794

BOROVINSKIY L.A.

51-4-2-5/28

AUTHOR: Borovinskiy, L. A.

TITLE: Calculation of the Absorption Spectrum of Benzene Based on a "Metallic" Model Taking Into Account Periodic Potential and π -electron Interaction. (Raschet spektra pogloshcheniya benzola na osnove "metallicheskoj" modeli s uchetom periodicheskogo potentsiala i vzaimodeystviya π -elektronov.)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol.IV, Nr.2, pp.156-167, (USSR)

ABSTRACT: This paper is entirely theoretical. The author briefly reviews and criticises earlier work of Ham and Ruedenberg (Refs.1, 2) and Araki (Ref.3). The present paper gives the method and results of calculation of frequencies of the singlet-singlet and singlet-triplet transitions in the benzene molecule. The calculations are based on the "metallic" model with periodic potential and π -electron interaction. This method assumes that it is possible to represent the π -electron wave-function as a product of a function which depends on a coordinate s and which describes the motion of a π -electron in the direction of the C-C bond,

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Calculation of the Absorption Spectrum of Benzene Based on a
"Metallic" Model Taking Into Account Periodic Potential and
 π -electron Interaction.

and a function of coordinates ρ and ϕ , which described the motion of a π -electron in the plane perpendicular to the molecular plane. It is also assumed that the energy operator for a π -electron in the field of the nucleus and of σ -electrons may be expressed as a sum of two operators which are functions of s and (ρ, ϕ) respectively. Overlapping of various configurations is discussed. The results obtained are in satisfactory agreement with the experimental values (see Table 5) except for the frequency of the ${}^1A_{1g} \rightarrow E_{1u}$ transition. The latter discrepancy may be due to: (1) the method of obtaining of certain integrals used in the calculation; (2) energy of this transition being close to the ionization energy, since the calculation method described here is not applicable near the ionization energies; (3) interaction between π -electrons and σ -electrons may not be negligibly small (Refs.13, 14). The author thanks M.V. Vol'kenshteyn

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Calculation of the Absorption Spectrum of Benzene Based on a
"Metallic" Model Taking Into Account Periodic Potential and
 π -electron Interaction.

for his interest, and M.N. Adamov and M.G. Veselov
for their advice. There are 5 tables, and 16
references of which 6 are Soviet, 5 American, 2
Japanese, 2 French and 1 Dutch.

ASSOCIATION: Institute for High Molecular Compounds, Academy of
Sciences of the USSR. (Institut vysokomolekulyarnykh
soyedineniy, AN SSSR.)

SUBMITTED: April 3, 1957.

1. ~~Electrons-Motion-Theory~~
2. ~~Benzene-Absorption spectrum-~~
Mathematical analysis
3. ~~Benzene-Absorption spectrum-Theory~~

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Sov/51-4-4-16/24

AUTHOR: Borovinskiy, L.A.TITLE: On Conditions for Joining of Functions in a Uni-dimensional
Metallic Model of a Molecule (Ob usloviyakh sshivaniya
funktsiy v odnomernoy metallicheskoj modeli molekuly)PERIODICAL: Optika i Spektroskopiya, 1958, Vol IV, Nr 4,
pp 526 - 528 (USSR).ABSTRACT: In the majority of papers on molecules with branched
bonds, where calculations are made using a metallic model, the
conditions for joining of the wave-functions at the branching
point are given in the form:

$$\psi(x_{1p}) = \psi(x_{2p}) = \psi(x_{3p}) \quad (1)$$

$$\left[\frac{d\psi(x_1)}{dx_1} + \frac{d\psi(x_2)}{dx_2} + \frac{d\psi(x_3)}{dx_3} \right]_P = 0 \quad (2)$$

where $\psi(x_1)$, $\psi(x_2)$, $\psi(x_3)$ are the wave-functions for
Card1/3 three branches meeting at a point P, and x_1 , x_2 , x_3 are

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On Conditions for Joining of Functions in a Uni-dimensional Metallic Model of a Molecule

the co-ordinates of each of the branches, with a common origin at the point P. Kuhn (Ref 1) suggested that the condition of Eq.(2) should be replaced by a condition of the type:

$$\left[\frac{d\psi(x_1)}{dx_1} + \frac{d\psi(x_2)}{dx_2} + \frac{d\psi(x_3)}{dx_3} \right]_P = K\psi(x_p) \quad (3)$$

where K is a constant equal, in order of magnitude, to $1/a$, where a is the length of the C-C bond. Paradoxical results obtained on application of the conditions of Eq.(1) and Eq.(2) or of Eq.(1) and Eq.(3) indicate that these conditions are erroneous. The author does not suggest a set of conditions applicable to all molecules but considers such conditions for two special cases. These two cases are a molecular model in the form of a circle of radius R with a rectilinear branch of length l (Figure 1). Such a model may be used for calculation of the benzyl radical (Ref 2). The second example Card2/3 is in the form of a two-dimensional potential box in the form

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of a ring of radii R_1 and R_2 with a branch bounded by two radii and two arcs (Figure 2). These two examples are approximations because of replacement of the usual hexagons (e.g. for benzene rings) by circles and the consequent change in angles at which bonds meet at the branching point. Another approximation is made in neglecting of the electron interaction and of the finite magnitude of the ionisation potential. The results obtained show, however, that in molecules consisting of rings and linear portions, the coupling between electrons of the ring and electrons of the linear portion is weak. The author thanks M.V. Vol'ken-shteyn for his constant interest and M.G. Veselov for his criticism. There are 2 figures, 6 references, 2 of which are Soviet, 2 German and 2 in English.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR
(Institute for High-molecular Compounds Ac.Sc.USSR)

SUBMITTED: July 17, 1957

Card 3/3

1. Molecular association Theory

AUTHOR: Borovinskiy, L. A. SOV/48-22-9-2/40

TITLE: Calculation of Absorption Spectra of Molecules of Un-saturated Hydrocarbons on the Basis of a Metal Model
(Raschety spektrov pogloshcheniya molekul nenasyshtennykh uglevodorodov na osnove metallicheskoj modeli)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 9, pp 1019 - 1022 (USSR)

ABSTRACT: The present paper is dedicated to two problems: Firstly to the calculation of the absorption spectrum of benzene on the basis of a metal model under consideration of the periodic potential and the interaction of the π -electrons; secondly to the study of the coupling of wave functions in the calculation of the molecules containing a branched C-C-chain. In the case of a ring-shaped model (Fig 1) of a benzene molecule the operator of interaction takes the following form:

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Calculation of Absorption Spectra of Molecules of
Unsaturated Hydrocarbons on the Basis of a Metal Model

SOV/48-22-9-2/40

$$U_{ik} = \frac{e_0^2}{2R \sqrt{\sin^2 \frac{\varphi_i - \varphi_k}{2} + u^2}} \quad (1a)$$

For the determination of the benzene spectrum the eigenvalues of the operator (2) must be determined:

$$H = -\frac{\hbar^2}{2m} \sum_{i=1}^6 \frac{d^2}{d\varphi_i^2} + V_0 \sum_{i=1}^6 \cos 6\varphi_i +$$

$$+ \frac{e_0^2}{2R} \sum_{i>k}^6 \sum_{k=1}^6 \frac{1}{\sqrt{\sin^2 \frac{\varphi_i - \varphi_k}{2} + u^2}}. \text{ The energy levels}$$

of the system are determined according to the secular equation:

$$|H_{ik} - \lambda \delta_{ik}| = 0.$$

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Calculation of Absorption Spectra of Molecules of SOV/48-22-9-2/40
 Unsaturated Hydrocarbons on the Basis of a Metal Model

The terms corresponding to the interaction of the electrons are represented by the following integrals:

$$I_m = \int_0^{\pi} \frac{\cos 2\beta m}{\sqrt{\sin^2 \beta + u^2}} d\beta .$$

For every kind of symmetry the computation of only the smallest roots of the secular equation is of practical interest. The number of configurations of every kind of symmetry, which because of the interaction of the electrons plays a considerable role, amounts to 13 - 15. The results are listed in the table. The transition energies (in conventional units) are given as equal to

$$E_c = \frac{\hbar^2}{2mR^2} = 2,17 \text{ eV. For the calculation of the}$$

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molecules with branched C-C-bonds the coupling conditions

Calculation of Absorption Spectra of Molecules of
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of the functions and their derivatives in the branching points must be determined. The computation of the energy levels of single molecules and free radicals showed that the application of the equation (4) leads to a number of paradoxical conclusions. For this reason (4) was subjected to a check and found to be erroneous. The two-dimensional model was investigated in the domain of branching to determine the coupling conditions of the functions (Fig 2). The claim that the wave function and its derivative are to be continuous along the longitudinal coordinate allows to determine the relation between the values of the wave function and the derivative at the boundaries of the domain of branching and of the separate branches. There are 2 figures, 1 table, and 8 references, 5 of which are Soviet.

Card 4/4

AUTHOR: Borovinskiy, L.A.

SOV/51-6-2-36/39

TITLE: Once More on the Conditions of Joining Functions in a Unidimensional Metallic Model of a Molecule (Answer to T.K. Rebane) (Yeshche raz ob usloviyakh sshivaniya funktsiy v odnomernoy metallicheskoj modeli molekuly)(Otvvet T.A. Rebane)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 2, pp 267-268 (USSR)

ABSTRACT: The author (Borovinskiy) shows how the separation of variables questioned by Rebane in the preceding article (Ref 1), was carried out. Borovinskiy also points out that experimental data confirm loose coupling between benzene rings in biphenyl and justified treatment of these rings as independent entities. Borovinskiy repeats his objections to Rebane's treatment of the "ring with a projection" model. Difficulties with this model, when the projection is allowed to shrink to zero, are ascribed to joining of wave-functions of the ring and the projection in such a way as to make the electron density continuous. Borovinskiy points out that motion of π -electrons in a branched molecule

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Once More on the Conditions of Joining Functions in a Unidimensional Metallic
Model of a Molecule

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cannot be described by means of a unidimensional model with
continuous wave-functions. There are 5 Soviet references.

SUBMITTED: July 17, 1958

Card 2/2

SOV/51-7-2-19/34

AUTHORS: Borovinskiy, L.A. and Fedorova, L.M.

TITLE: Comparison of the Energy Levels in the Three-Dimensional and One-Dimensional Metallic Models of the Benzene Molecule (Sopostavleniye energeticheskikh urovney v trekhmernoy i odnomernoy metallicheskoj modeli molekuly benzola)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 2, pp 253-256 (USSR)

ABSTRACT: Ruedenberg and Scherr (Ref 1) compared the one-dimensional and three-dimensional metallic models of molecules with linear conjugated bonds between atoms. The results of these two workers cannot be used directly in a discussion of cyclic molecules. The present paper describes a comparison of the three-dimensional and one-dimensional models of the benzene molecule, with assumptions which allow separation of energy of the longitudinal motion from the total energy of π -electrons and which ensure transition from the three-dimensional to the one-dimensional model under specified conditions. The authors estimate also the errors in determination of the energy levels which are due to these assumptions. A three-dimensional potential box is used (a cylinder of height H and a base in the form of a ring consisting of portions of circular perimeters, radii R_1 and R_2). The potential inside the box is assumed

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Comparison of the Energy Levels in the Three-Dimensional and One-Dimensional
Metallic Models of the Benzene Molecule

to be zero and outside the box it is taken to be infinite. It is found that the one-dimensional model describes behaviour of π -electrons in cyclic molecules as accurately as in molecules with linear conjugated bonds. The authors warn that application of the one-dimensional model to molecules with branched conjugated bonds may sometimes lead to contradictions and obviously wrong results. There are 1 table and 4 references, 3 of which are Soviet and 1 English.

SUBMITTED: December 31, 1958

Card 2/2

AUTHOR: Borovinskiy, L.A.

SOV/51-7-4-32/32

TITLE: Reply to N.V. Kudryatseva and A.F. Terpugova

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 4, pp 579-580 (USSR)

ABSTRACT: Borovinskiy replies to the preceding letter from Kudryatseva and Terpugova (see the preceding abstract). He expresses the opinion that reduction of the molecular model, consisting of a ring of radius R with a branch of length l , to a ring with a special point on it when $l \rightarrow 0$ and to a potential well with one infinite wall when $R \rightarrow 0$ (or $l \rightarrow \infty$), indicates that the model is internally inconsistent, since it violates the conditions of continuity of the electron states along the model boundary (this continuity is destroyed by the special point on the ring).

SUBMITTED: May 26, 1959

Card 1/1

USCOMM-DC-61,866

S/051/60/008/02/009/036
E201/E391

AUTHOR: Borovinskiy, L.A.

TITLE: A New Variant of the Metallic Model of a Molecule ²¹

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 2,
pp 191 - 198 (USSR)

ABSTRACT: The author proposes a metallic model for molecules with chains of conjugated bonds. The molecular skeletons (cores), consisting of nuclei and σ -electrons, are modelled by a fixed charge uniformly distributed along a line whose length is equal to the length of the conjugated-bond chain. Motion of π -electrons in the field of the core is considered and variables representing longitudinal and transverse motion of π -electrons are separated by an approximate method. In the zero approximation the longitudinal part of the potential function may be replaced by the potential function of a harmonic oscillator and appropriate energy levels are derived from the harmonic oscillator theory. A more exact representation of the potential function involves a semi-classical solution of the problem. The calculated absorption wavelengths agree quite well with experimental data for

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A New Variant of the Metallic Model of a Molecule
S/051/60/008/02/009/036
E201/E391
molecules of the types shown on p 197.
There are 2 tables and 3 references, 2 of which are
Soviet and 1 Swiss.

SUBMITTED: May 18, 1959



Card 2/2

BOROVISOV, A. M., GOLYSHEV, G. I., KOKIN, G. A.

"Some Characteristics of Atmosphere structure of the Southern Hemisphere"

Soviet Papers Presented at Plenary Meetings of Committee on Space Research (COSPAR) and Third International Space Science Symposium, Washington, D. C., 23 Apr - 9 May 62.

L 16605-65 EWT(d)/EWT(m)/EWA(d)/EWP(v)/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(l) EFW-4
ACCESSION NR: AT4048352 ASD(a)-5 JD/HW S/3000/64/000/008/0091/0099

AUTHOR: Chudakov, P.D. (Candidate of technical sciences); Il'ich, V.D. (Engineer);
Borovitchenko, A.A. (Engineer)

TITLE: A study of the processes of steel pressing in the semihot state

SOURCE: Moscow. Eksperimental'ny¹⁸y nauchno-issledovatel'skiy institut kuznechno-
pressovogo mashinostroyeniya. Nauchny¹⁸ye trudy*, no. 8, 1964. Novoye v kuznechno-
shtempovochnom proizvodstve (Latest developments in the forging industry), 91-99 B71

TOPIC TAGS: steel pressing, hot pressing, cold pressing, steel forging, pressing
lubricant, semihot pressing

ABSTRACT: The authors briefly discuss cold and hot pressing of steels and conclude that
in some cases it may be more economical to press semihot steel. The purpose of semihot
pressing compared to cold pressing is to decrease the working pressure and to obtain
parts whose accuracy and surface would be comparable to those obtained by cold pressing.
Since semihot pressing is a new and still insufficiently investigated process, it is not
yet used in industry. Therefore, the first investigations to determine the basic parameters
of semihot pressing were made during 1960-1961 at the authors' Institute; the results
obtained are discussed in this paper. A special machine for semihot pressing is described.

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L 16605-65
ACCESSION NR: AT4048352

A number of lubricants for semihot pressing were prepared and their effectiveness tested; their composition is given. A table shows the dependence of the values of specific pressures employed for various steels on the temperature and the degree of deformation. It is evident that a suitably chosen lubricant lowers the specific pressure appreciably in the temperature interval investigated (923-1123K). In comparison with cold pressing, a lowering of specific pressure by a factor of 2-4 was observed. It is noted that the accuracy of the dimensions of forgings obtained by semihot pressing is determined essentially by the accuracy of the die and the pressing machine. When designing a pressing machine for semihot pressing, it is necessary to allow for temperature shrinkage, which is equal to 0.008. The microstructure of the forgings obtained by semihot pressing was examined and no microcracks were detected. The satisfactory results obtained made a continuation of the investigation advisable to provide a basis for practical recommendations concerning the use of semihot pressing in industry. Orig. art. has: 6 figures and 3 tables.

ASSOCIATION: Eksperimental'nyy nauchno-issledovatel'skiy institut kuznechno-pressovogo mashinostroyeniya, Moscow (Experimental Scientific Research Institute of Forging Machinery)

SUBMITTED: 00

ENCL: 00

SUB CODE: MM, FP

NO REF SOV: 003

OTHER: 000

Card 2/2

SHISHKIN, P.; YESIFOV, P.T.; BOROVITIN, B.P.; KHOKHLOV, V.A.;
GRINER, V., red.

[Ways of reducing losses of metallic supports in mines of
the "Vorkutugol'" Combine] Puti snizheniia poter' metalli-
cheskoi krep'i na shakhtakh kombinata Vorkutugol'. Syktyvkar,
Komi knizhnoe izd-vo, 1964. 40 p. (MIRA 18:4)

GORNYI, G.G.; BOROVITIN, M.P.; POVES'MA, K.S.; SOLOV'YEVA, E., redd.

Tr. Pechorskogo gos. univ. Ser. Tekhn. nauki
[Using anchor bolting in Pechora Basin mines] Primenenie
ankernoi krep'i na shakhtakh Pechorskogo basseina. Syktyvkar,
Komi knizhnoe izd-vo, 1964. 61 p. (MIRA 18:4)

BERDASHKEVICH, Ya.A.; BELOUS, A.M.; BOROVITSKAYA, A.I.; YENGALYCHEVA, N.A.;
POGREBNIYAK, B.A.; SOKOL, G.M.; TARASENKO, N.N.

Occurrence of traumatic orthopedic diseases among rural and
urban population. Ortop., travm. i protez. 26 no.11:60-66
N '65. (MIRA 18:12)

1. Iz Khar'kovskogo instituta protezirovaniya, travmatologii
i ortopedii imeni M.I. Sitenko (direktor - chlen-korrespondent
AMN SSSR prof. N.P. Novachenk). Adres avtorov: Khar'kov,
Pushkinskaya ul. d. 80, Institut imeni M.I. Sitenko.

BOROVITSKAYA, G.K.

Studying the feeding of gallinaceous birds in Buryatia.
Kraeved. sbor. no.6:99-101 '61. (MIRA 15:2)
(Buryat-Mongolia--Gallinae)
(Birds--Food)

GANAGO, F.M., kand. med. nauk; Primalni uchastiyev: ALEKSEYEVA, R.M.,
vrach (Sverdlovsk); AYZENSHTAYN, B.S., vrach (Sverdlovsk);
BABINOVA, G.D., vrach (Sverdlovsk); BORONITSKAYA, L.M., vrach
(Sverdlovsk); VARGANOVA, M.V., vrach (Sverdlovsk); KOPYLOVA,
K.P., vrach (Sverdlovsk); SOKOLOVA, O.V., vrach (Sverdlovsk);
SHEVTSOVA, R.P., vrach (Sverdlovsk); SHELOMOVA, I.M., vrach
(Sverdlovsk); BYKHOVSKAYA, M.A., vrach (Revda); BELYAYEVA,
N.Ya., vrach (Magnitogorsk); KRUGLOVA, N.A., vrach (Kurgan);
NIKIFOROVA, F.N., vrach (Kurgan); MITINA, O.A., vrach (Asbest);
PORKHOVNIKOVA, E.D., vrach (Ufa); PONOMAREVA, N.I., vrach
(Orenburg); RASSOSHNYKH, G.F., vrach (Perm¹); SAZANOVA, V.V.,
vrach (Izhevsk)

Chemoprophylaxis of tuberculosis in children and adolescents
in foci of tuberculous infection. Probl. tub. 42 no.1:6-11
'64. (MIRA 17:8)

1. Detskoye otdeleniye (zav. F.M. Ganago) Sverdlovskogo insti-
tuta tuberkuleza (dir. - prof. I.A. Shaklein) (for Ganago).

BOROVITSKAYA, M. [P.]

PA 3/50T63

USSR/Medicine - Parasitology 11 Sep 49
Leeches

"Finding of Parasitic Leeches of the Family Ichthyobdellidae in the Mantle Cavity of Cephalopod Mollusks", M. Borovitskaya, Leningrad State Ument A. A. Zhdanov, 3 pp

"Dok Ak Nauk SSSR", Vol LXVIII, No 2 4-25-7

Since leeches of subject family are usually found in fish, seldom on decapods or pentopods and never before on cephalopods, discovery of two specimens in the mantle cavity of a Polypus dof- leini by A. K. Akhmerov on the Kurile-Sakhalin Expedition aroused great interest. Because of 3/50T63

USSR/Medicine - Parasitology (Cont'd) 11 Sep 49

its morphology, described in detail, it is called Crangonobdella schmerovi nov. sp. Submitted by Acad K. I. Skryabin 11 Jul 49.

3/50T63

BOROVITSKAYA, M. P.

Parasites - Fish

Comparison of parasitofauna of commercial fish from Danube limans and the Danube River.
Trudy Len. ob-va.est. 71, No. 4, 1952.

SO: Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

BOROVITSKAYA, M.P.

Biology of the amphipod *Gammarus pulex* L. in the waters of Leningrad Province and its significance in fish culture. Trudy Gidrobiol. ob-va 7:99-122 '56. (MLRA 10:2)

1. Leningradskiy gosudarstvennyy ordena Lenina universitet imeni A.A. Zhdanova.
(Ropsha--Amphipoda) (Fishes--Food)

BOROVITSKAYA, M.P.; VOLODCHENKO, N.I.; VYSOKOSTROVSKAYA, I.B.; ZHURKOVA,
N.A.

Effect of large doses of cortisone on C57BL mice. Dokl. AN
SSSR 156 no.4:982-983 Je '64. (MIRA 17:6)

1. Leningradskiy pediatricheskiy meditsinskiy institut.
Predstavleno akademikom Ye. N.Pavlovskim.

BOROVITSKAYA, N.M.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1441
AUTHOR BOROVICKAJA, N.M.
TITLE Measuring the Dynamical Modulus of Rubber for Very Low Amplitudes
of Deformation by the Optical Modulation-Interference Method.
PERIODICAL Dokl. Akad. Nauk, 109, fasc. 5, 923-925 (1956)
Issued: 10 / 1956 reviewed: 10 / 1956

The application of this method for the purpose of such measurements is useful for two reasons: Firstly, this method is more accurate and more simple than the acoustic method at present employed. Secondly, experimental possibilities are extended, and working at very low amplitudes is rendered possible. In connection with other methods this method extends to a very wide interval of deformation amplitudes.

Description of measuring device: A MICHELSON interferometer and a monochromatic light source are used. The interference figure (lines of equal thickness) is projected onto the cathode of a photo multiplier. The voltage generated by the photo multiplier is transferred to the input of a filter with a narrow band and a measuring device is located at the output of this filter. By means of the measuring device described it was possible to determine shiftings of the order $0,01 \text{ \AA}$, and measuring could be carried out at frequencies of from 100 to 10.000 c. Three rubber samples were examined at the same time in each case. By measuring the amplitude of the deformation of rubber was obtained and the amplitude of force was then found by computation. The dynamical modulus was defined as a ratio (amplitude of mechanical voltage / amplitude of deformation).

Dokl.Akad.Nauk, 109, fasc.5, 923-925 (1956) CARD 2 / 2 PA - 1441

The modulus for the following four types of rubber was determined: 1.) Product of vulcanization of natural caoutchouc, filling material chalk. 2.) Product of vulcanization of natural caoutchouc without filling material. 3.) Product of vulcanization of natural caoutchouc, filling material soot. 4.) Product of vulcanization SKS-30, filling material soot. In the case of all samples the dependence of the deformation of rubber on frequency was recorded at 20° C, on which occasion all measurements were carried out at frequencies of from 300 to 500 c. The modulus of rubber type 3) remained constant up to a frequency of 8000 c (within 10%) and increased rapidly with a further increase of frequency. The moduli of the samples were measured for deformation amplitudes of from 1 to 200 Å. The modulus remains constant in the case of all samples within the entire interval of shifting with an accuracy of 5%.

From these data it is possible to determine YOUNG'S modulus of the material by employing the method developed by G.M.BARTENEV and V.I.NOVIKOV, Dokl.Akad.Nauk, 91, 1027 (1953). For the various types of rubber the following values are obtained: 1) 9 kg/cm²; 2) 3 kg/cm²; 3) 85 kg/cm² and 4) 90 kg/cm².

INSTITUTION/ Institute for Scientific Physical and Technical Research of the
State University GOR'KIJ

24(6)

AUTHOR:

Borovitskaya, N. M.

SOV/57-58-12-6/15

TITLE:

~~Dependence of the Dynamic Properties of Rubbers on the Deformation Amplitude~~ (Zavisimost' dinamicheskikh svoystv rezin ot amplitudy deformatsii)

PERIODICAL:

Zhurnal tekhnicheskoy fiziki, 1958, Nr 12, pp 2689-2692 (USSR)

ABSTRACT:

In the present case the dynamic properties of rubbers were investigated according to the method of modulation interference with deformation amplitudes exceeding 200 Å in the interval of relative deformations of from 0.01 to 0.75 % with a frequency of 100 cps and at a constant temperature of 18°C. It was found that the dynamic modulus of the filled rubbers with decreasing deformation amplitude first increases and then from a certain amplitude onwards remains practically constant. The phase shift between the force acting upon the rubber and the deformation decreases with decreasing deformation amplitude. For nonfilled rubbers the dynamic modulus and the phase shift are independent of the variation of the deformation amplitude in the range under discussion. There are 3 figures and 3 references, 1 of which is Soviet.

Card 1/2

Dependence of the Dynamic Properties of
Rubbers on the Deformation Amplitude

SOV/57-58-12-6/15

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet N.-issl.
radiofizicheskiy institut (Gor'kiy State University
Scientific Research Institute of Radiophysics)

SUBMITTED: November 10, 1957

Card 2/2

OZHIGOV, Ye.P.; KOTSUPALO, N.P.; BOROVITSKAYA, N.V.

Breaking down datolite ore with soda without using autoclaves.
Izv.Sib.otd.AN SSSR no.5:55-63 '59. (MIRA 12:10)

1. Dal'nevostochnyy filial Sibirskogo otdeleniya Akademii nauk
SSSR.

(Datolite) (Soda)

BOROVITSKIY, A.

Visiting with roller mill operators. Mest.prom.1 khud.promys. 2
no.5:12 My '61. (MIRA 14:5)
(Sverdlovsk--Rolling mills)

BOROVITSKIY, A., podpolkovnik

Prepare the vegetable storehouse in time. Tyl. i snab. Sov. Voor.
Sil 21 no.6:75-77 Je '61. (MIRA 14:8)
(Russia--Army--Commissariat)

OL'KHOVIKOV, Yu.; GURTSKAYA, P.; BOROVITSKIY, B.; TITOV, A.; YAMKA, I.

The roll call of the detachments of the "Searchlight of the Communist Youth League" movement continues. Tekh.mol. 30 no.11:18-19 '62.

(MIRA 16:9)

1. Chlen oblastnogo shtaba Kommunisticheskoy partii, Rostov (for Ol'-khovikov). 2. Direktor Omskogo shinnogo zavoda (for Borovitskiy). 3. Sekretar' komiteta komсомола shakhty No.5 tresta Tkvarcheliugol'", Tkvarcheli (for Gurtskaya). 4. Nachal'nik oblastnogo shtaba Kommunisticheskoy partii, sekretar' oblastnogo komiteta Vsesoyuznogo Leninskogo Kommunisticheskogo soyuza molodezhi (for Titov). 5. Predsedatel' kolkhoza "Zarya kommunizma", selo Tashlyk, UkrSSR (for Yamka).

(Communist Youth League)

BOROVITSKIY, B.

Topical exhibit "Complex low-voltage switchgear." Prom. energ.
17 no.12:43 D '62. (MIRA 17:4)

1. Direktor pavil'ona "Elektrifikatsiya SSSR" na Vystavke dostizheniy
narodnogo khozyaystva SSSR.

L 31120-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM

ACCESSION NR: AP5007172

S/0286/65/000/003/0042/0042

22
B

AUTHOR: Shkol'nikov, V. M.; Shevlyakov, V. A.; Borovitskiy, B. K.; Tseytlin, I. M.

TITLE: A method for producing antiager for rubber products. Class 23, No. 167915

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 3, 1965, 42

TOPIC TAGS: antiager, rubber, paraffin, asphalt

ABSTRACT: This Author's Certificate introduces a method for producing an antiager for rubber products. The antiager is based on crude paraffins. In order to provide a wider choice of raw materials and to simplify the process, the asphalt from deasphaltization of tar is deasphalted in a solution of propane, the deasphaltizate is treated in a selective solvent and the resulting product is deparaffinated.

ASSOCIATION: none

SUBMITTED: 09Aug63

ENCL: 00

SUB CODE: MI

NO REF SOV: 000

OTHER: 000

Card 1/1

BOROVITSKIY, N. Yu.

RABINKIY, Ye.M.; BOROVITSKIY, N. Yu.

Adjustable pulleys used in V-belt transmissions. Stan. 1 instr. 28
no. 5:38 My '57. (MLRA 10:6)

(Pulleys)

BOROVITSKIY, P.
BOROVITSKIY, P.

Repairing connecting rod bushings. Avt. transp. 35 no. 8:20 Ag '57.
(Automobiles--Maintenance and repair) (MIRA 10:9)

BOROVITSKIY, P. I.

Science

Brief handbook for the teacher of natural history. Leningrad, Gos. Uchebno-pedagog. izd-vo. Leningradskoe otdelenie, 1951. Izd 2.

9. Monthly List of Russian Accessions, Library of Congress, June 1953² Unclassified.

BOROVITSKIY, P.I.

Concise manual for natural science teachers. Reviewed by P.P. Ivanov
Est. v shkole no. 1, 1952

BOROVITSKIY, Pavel Illarionovich; VINNICHENKO, Pavel Fedorovich; KRAMAROV, Dmitriy Yakovlevich; TULYAKOVA, Glafira Mikhaylovna; YAKOVIEVA, Ol'ga Sergeevna; GIRD, S.V., redaktor; KIRNARSKAYA, A.A., tekhnicheskiy redaktor

[Methods of teaching natural history] Metodika prepodavaniia estestvoznaniia. Pod obshchei red. P.I.Borovitskogo. Leningrad, Gos. uchebno-pedagog. izd-vo Ministerstva prosveshcheniia RSFSR, Leningradskoe otd-nie, 1955. 607 p. (MIRA 8:6)
(Natural history--Study and teaching)

BOROVITSKIY, Pavel Illarionovich; ~~TEREKHOVA~~, A.F.. redaktor; GURDZHIYEVA,
A.M., ~~tekhnicheskii~~ redaktor.

[A short handbook for the teacher of natural history] Kratkii
spravochnik prepodavatelya estestvoznaniya. Sostavlen kolektivom
avtorov. Izd. 3-e, ispr. i dop. Leningrad, Gos. uchebno-pedagog.
izd-vo Ministerstva prosveshcheniya RSFSR, 1955. 758 p. (MLRA 8:10)
(Natural history--Handbooks, manuals, etc.)

BOROVITSKIY, P. I., prof.

Study plants during spring excursion to a forest; sixth grade.
Biol. v shkole no.2:11-14 Mr-Apr '61. (MIRA 14:3)

1. Leningradskiy pedagogicheskiy institut imeni A. I. Gertsena.
(Forest ecology—Study and teaching)
(School excursions)

BOROVITSKIY, Pavel Illarionovich; VINNICHENKO, Pavel Fedorovich; KRAMAROV,
Dmitriy Yakovlevich; TULYAKOVA, Glafira Mikhaylovna; YAKOVLEVA,
Ol'ga Sergeyevna; KUZNETSOV, P.A., red.; KAPYSHEVA, V.S., red. izd-
va; MURASHOVA, V.A., tekhn. red.

[Methods of teaching biology] Metodika prepodavania biologii. Izd.2.,
perer. Moskva, Vysshaya shkola, 1962. 335 p. (MIRA 15:7)
(Biology--Study and teaching)

BOROVITSKIY, P.I., prof.

Excursion to a peat bog. Biol. v shkole no.3:21-24 My-Je '62.
(MIRA 15:7)

1. Leningradskiy pedagogicheskiy institut imeni A.I. Gertsena.
(Peat bogs) (School excursions)

BOROVITSKIY, P.I., prof.

Let's improve the present system of biological education. Biol.
v shkole no.3:28-32 My-Je '63. (MIRA 16:10)

1. Leningradskiy pedagogicheskiy institut imeni A.I.Gertsena.

BOROVITSKIY, S. I.

Borovickii, S. I. On fluctuations in a linear system with periodically varying parameters. Doklady Akad. Nauk SSSR (N.S.) 74, 233-236 (1950). (Russian)

The deterministic equation of motion $\dot{x} = a(t)x + b(t)$ is replaced by the diffusion equation $w_t = -\{(ax+b)w\}_x + c(t)w_x$, whose fundamental solution can be written down in terms of the normal distribution. The author supposes that the coefficients a, b, c are periodic functions. The diffusion equation then determines a process for $-\infty < t < \infty$ and the author calculates the mean, dispersion, Fourier transform, and spectrum of the sample function. *W. Feller.*

Source: Mathematical Reviews,

Vol. 12 No. 4

BOROVITSKIY, S. I.

USSR/Physics - Statistical Mechanics 21 Sep 50
New Techniques
Gas Discharge

"Spectral Method for Investigating Statistical Phenomena in Gas Discharge," S. I. Borovitskiy, Ye. I. Tikhova, Physicotech Inst, Gor'kiy State U

"Dok Ak Nauk SSSR" Vol LXXIV, No 3, pp 449-452

Proposes new and simple subject method based on investigation of spectrum of flow occurring in discharge tube when its electrodes are supplied with periodic (e.g., sinusoidal) voltage. As S. S. Gorelik showed theoretically ("Iz Ak Nauk, Ser

174769

USSR/Physics - Statistical Mechanics 21 Sep 50
(Contd)

"fiz," Vol XIV, 174) and authors verified, this spectrum consists of 2 parts: discrete lines and continuous spectrum. Submitted 14 Jun 50 by A. A. Andronov.

174769

WOODWARD, P.M.; BOROVITSKIY, S.I. [translator]; GORELIK, Gabriel' Semenovich, redaktor; DIKAREVA, A.I., redaktor; KORUZEV, N.N., tekhnicheskii redaktor.

[Probability and information theory, with applications to radar. Translated from the English] Teoriia veroiatnostei i teoriia informatsii s primeneniiami v radiolokatsii. Perevod s angliiskogo S.I. Borovitskego. Pod red. G.S.Gerelika. Moskva, Izd-vo "Sovetskoe radio", 1955. 127 p. (MLRA 9:4)
(Radar) (Probabilities) (Information theory)

241. HETERODYNING OF LIGHT. S.I. Borovitski and G.S. Gorelik. 538.561: 535.33
Uspekhi Fiz. Nauk, Vol. 59, No. 3, 543-52 (1956). In Russian.
The effect consists essentially of mixing two optical spectral lines whose frequencies differ by an amount which falls within the region of very high radiofrequencies. The authors review the theory and discuss the experimental equipment. C.R.S. Manders

Handwritten initials and a large number '2'.

Handwritten initials 'CH' and 'MY'.

AUTHOR: Borovitskiy, S.I.

109-3-2-10/26

TITLE: Some Properties of Optical Transducers in Radio Engineering
(O nekotorykh svoystvakh opticheskikh preobrazovateley v radiotekhnike)PERIODICAL: Radiotekhnika i Elektronika, 1958, vol.III, No.2,
pp. 237 - 243 (USSR).

ABSTRACT: The system described consists of a cathode-ray tube and a camera tube. The electron beam of the cathode-ray tube moves along the axis x with a velocity v , while in the direction of the axis y , the frequency of the beam is not less than twice the highest frequency in the modulating signal, $f(t)$. This arrangement results in the appearance of a vertical band on the screen which moves with the velocity v ; the brightness of the band is dependent on $f(t)$. If the screen of the cathode-ray tube is photographed with a delay equal to the period of the horizontal time base, the resulting picture is similar to that shown in fig.1. The average brightness of the element of the screen having co-ordinates x and y , taken over one period of the horizontal time base, is expressed by:

$$F(xy) = A_0 + A_1 f\left(\frac{x}{v} + t_0\right) \quad (1)$$

Card1/3

109-3-2-10/26

Some Properties of Optical Transducers in Radio Engineering

where t_0 is the instant of the beam crossing the straight line, $x = 0$. The screen of the tube is covered with a mask whose transparency can be described by a function $J(xy)$. The picture on the screen is projected, through the mask, on to the screen of the camera tube. The raster of the camera tube is similar to that employed in the normal television tube. The frame frequency in the camera tube is equal to the frequency of the horizontal time base in the first tube. The camera tube is fitted with an integrating circuit, whose time constant is equal to the period of one line. Consequently, the output of the integrator over the line can be expressed by:

$$g(y) = K \int_{-a/2}^{a/2} F(xy)J(xy)dx \quad (2)$$

If the transparency of the mask is expressed by Eq.(3), the above transducer system can be used as a spectrum analyser. The frequency range of such an analyser can be varied by changing the velocity v of the time base. It is shown that the resolving power of the analyser is of the order of $1/500$. By

Card2/3

Some Properties of Optical Transducers in Radio Engineering 109-3-2-10/26

providing the transducer with the mask of the type shown in Fig.3, it is possible to employ it as a filter having a given impulse response; the transparency function of the mask is expressed by Eqs.(10) and (11), where $h(t)$ is a given time function. It is also shown that the system can be used as a correlator for the detection of signals in noise and it can find applications in signal selectors and coding devices. There are 3 figures and 5 references, 4 of which are English and 1 Russian.

SUBMITTED: April 27, 1956

AVAILABLE: Library of Congress

Card 3/3 1. Cathode ray tubes 2. Transducers-Optical 3. Systems-Analysis

BOROVITSKIY, S.I.; MITYUGOV, V.V.

Properties of nonequilibrium radiation in thermodynamically
reversible converters. Izv. vys. ucheb. zav.; radiofiz. 7
no.5:854-864 '64. (MIRA 18:2)

L-25392-65 EWT(1)/EEC(t) Feb IJP(c)

ACCESSION NR: AP5002157

S/0120/64/000/006/0089/0093

AUTHOR: Borovitskiy, S. I.; Starodumov, M. N.; Tiflov, V. I.

17
B

TITLE: Control unit for an outfit for detecting a nuclear magnetic resonance by the spin-echo method

SOURCE Pribory i tekhnika eksperimenta, no. 6, 1964, 89-93

TOPIC TAGS: nuclear magnetic resonance, spin echo method

ABSTRACT: When master-oscillator pulses with period T_0 are applied to the input of the control unit (see Enclosure 1), one of these four programs is formed at the output: (1) Program I which corresponds to the method of detecting spin-echo signals described by H. Y. Carr, et al. (Phys. Rev., 1954, 94, 630); (2) Program II produces two pulses with a variable distance between them; if the first pulse turns the magnetic moment through 90° and the second pulse, through 180° , the method permits determining T_2 and D; the pulses $180^\circ, 90^\circ$ and $90^\circ, 90^\circ$

Card 1/3

L 25392-65

ACCESSION NR: AP5002157

permit determining T_1 ; (3) Program III yields three 90° pulses used for determining T_1 ; the interval between the first two pulses is τ_0 while the third pulse can be shifted; (4) Program IV yields two pairs of pulses with τ_0 interval within each pair and a variable distance between the pairs; this program is particularly suitable for measuring T_1 of the order of tens or hundreds of seconds. Tests showed that the control unit operates reliably with input pulses of 4-17 v 0.1-msec or more duration in a period of repetition 30 msec or longer. The output-pulse amplitude was about 60 v, their duration, within 1-160 microsec. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 12Dec63

ENCL: 01

SUB CODE: NP

NO REF SOV: 002

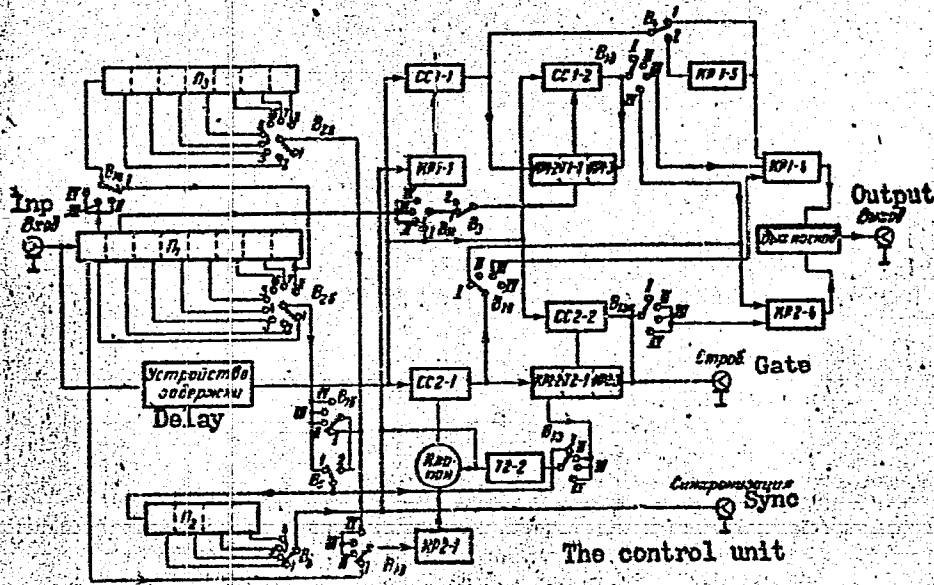
OTHER: 012

Card 2/3

I-25392-65

ACCESSION NR: AP5002157

ENCLOSURE: 01



Card 3/3

ACC NR: AP6036813

SOURCE CODE: UR/0368/66/005/005/0609/0613

AUTHOR: Borovitskiy, S. I.; Gryaznov, Yu. M.; Chastov, A. A.

ORG: none

TITLE: The width of the emission spectrum of a ruby laser with a bleaching liquid Q switch

SOURCE: Zhurnal prikladnoy spektroskopii, v. 5, no. 5, 1966, 609-613

TOPIC TAGS: solid state laser, ruby laser, Q switching, passive switching, phthalocyanine, gallium chloride, selenium glass, cadmium glass/KS-18, KS-19

ABSTRACT: The width of the emission spectrum of a ruby laser with a passive Q-switch was investigated for various generation regimes. The block diagram of the experimental setup is shown in Fig. 1. The active substance consisted of a polished ruby rod 1 (120 mm long and 10 mm in diameter with plane-parallel ends). The semi-confocal cavity comprised one -97% reflective (at 6925 Å) spherical mirror 3 with a 1000-mm radius of curvature and a stack of plane-parallel plates 4 placed in the focus of 3. The pumping was carried out by means of two IFP-2000 lamps, the pumping energy varying from 2 to 4 kJ. The optical switch 2 consisted of a phthalocyanine solution of gallium chloride in quinoline and was contained in a cell 5 mm thick with glass windows. The cell was tilted at a small angle to the laser axis. The transparency of the solution-filled cells used in the experiments was 25, 40, and 50%. The number

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UDC: 621.375.9

ACC NR: AP6036813

of giant laser pulses was recorded by an FEU-28 photomultiplier 5 and an oscillograph 6. An IT-51-30 Fabry-Perot wedge interferometer was used. Its plates were coated with a multilayered dielectric surface with a 94% reflectivity at 6943 \AA . The experiments were carried out at h (interferometer base) of 10 and 30 mm and the interferometer resolution range at $h = 30 \text{ mm}$ was $3.3 \times 10^{-3} \text{ cm}^{-1}$. The interferometer was illuminated by a parallel light beam from a telescope 7 fixed on an OSK-3 optical bench. The interferometer output was recorded on film in a lensless camera 9. The interferometer was tuned by means of Ne-He laser 10, splitter plate 11, and diaphragm 12. The total width of the emission spectrum of a ruby was 0.02 cm^{-1} in the case of free generation. The emission spectrum of a Q-switched laser was considerably narrower and consisted of one component whose width (measured by an MF-2 microphoto-

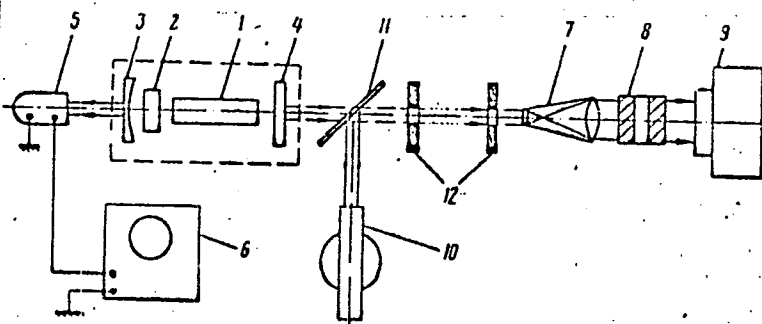


Fig. 1. Block-diagram of experimental setup

Card 2/3

ACC NR: AP6036813

meter) was $5 \times 10^{-3} \text{ cm}^{-1}$. This is comparable to the spectral width of a giant pulse obtained by F. J. McClung and D. Weiner (IEEE, J. Quantum Electronics, 1, no. 2, 1965, 94), who used a rotating prism for Q-switching and plane-parallel plates and a cell with a cryptocyanine dye for mode selection. In the case of giant-pulse operation using a passive Q-switch, the number of spectral lines increases with the pumping energy, with the number of lines being equal to the number of giant pulses. No significant changes in the quality of interferograms was observed when the ruby rod was replaced with another specimen, although in the case of a plane-parallel cavity considerable changes were observed from ruby to ruby. Other substances, such as KS-18 and KS-19 He-Cd glass, were also investigated as passive switches. The width of the emission spectrum of a laser with a KS-19 filter was $\sim 7 \times 10^{-3} \text{ cm}^{-1}$, and its total width increased with the pumping energy. Orig. art. has: 2 formulas and 3 figures.

SUB CODE: 20/ SUBM DATE: 28Dec65/ ORIG REF: 003/ OTH REF: 003/ ATD PRESS: 5108

Card 3/3

L 22875-65 EEC(b)-2/EPF(c)/EPA(s)-2/EEC(k)-2/EWA(h)/EWA(k)/EWG(k)/EWP(k)/
EWT(l)/EPA(bb)-2/FS(b)/T/EWA(m)-2 Pf-4/Pi-4/Pk-4/P1-4/PO-4/Pr-4/Pt-10/Pz-6/
ACCESSION NR: AP5002316 Peb IJP(c) JHB/II/AT/WG/VW/TW
S/0141/64/007/005/0854/0864

AUTHOR: Borovitskiy, S. I.; Mityugov, V. V.

TITLE: Properties of non-equilibrium radiation and thermodynamically reversible converters

SOURCE: IVUZ. Radiofizika, v. 7, no. 5, 1964, 854-864

TOPIC TAGS: energy converter, reversible thermodynamics, entropy, thermal efficiency

ABSTRACT: Expressions are derived for the entropy of non-equilibrium electromagnetic radiation produced by various converters used in electronics, such as thermistors and others. The analysis is limited to stationary incident and emitted radiation, as well as to a stationary operating condition of the converter. Only thermodynamically reversible converters, for which the entropy is additive, are considered. Operator calculus is used for the derivation of the non-equilibrium radiation entropy and the entropy flux. Although in the general case:

Card 1/2

L 12875-65

ACCESSION NR: AP5002316

the formulation of the properties of the reversible converter does not specify its behavior, if a monochromatic component is contained in the incident or the outgoing radiation (the converter operates like a heat engine), it is possible to use the data to estimate the maximum efficiency of such a device. By way of example the authors discuss several devices like a generator, detector, refrigerator, solar battery, Dyson sphere, and laser. Orig. art. has: 5 figures and 41 formulas.

ASSOCIATION: None

SUBMITTED: 10Jul63

ENCL: 00

SUB CODE: (P, TD

NR REF SOV: 003

OTHER: 004

Card 2/2

NIGMATULIN, I.N., kandidat tekhnicheskikh nauk; BOROVITSKIY, V.I., inzhener.

Conversion of high-power two-stroke engines ^{from} liquid fuels to
generator gas. [Trudy] MVTU no.35:126-134 '55. (MIRA 9:7)
(Gas and oil engines)

SOV/112-59-5-9099

8(0), 32(3)

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 5,
pp 98-99 (USSR)

AUTHOR: Borovitskiy, V. N.

TITLE: ~~Interconnecting the Heat Exchangers of Mercury-Arc Rectifier Units~~

PERIODICAL: Elektr. i teplovozn. tyaga, 1957, Nr 12, p 31

ABSTRACT: Repair of a water-cooled rectifier unit at a traction substation equipped with an individual type TV-1000 heat exchanger requires shutting down the rectifier. To obviate this disadvantage and to secure interchangeability of heat exchangers, an interconnection scheme was materialized at the Pokrovsko-Streshnevo substation, Kalininskaya Railroad; the scheme consists of two type TV-1000 and one type KT-90 heat exchangers equipped with TsNII type RND-1 thermoregulators. The scheme permits cooling any rectifier or a group of rectifiers by any heat exchanger and simplifies topping up the expansion tanks with distilled water. Any heat exchanger can be repaired.

Card 1/2

SOV/112-59-5-9099

Interconnecting the Heat Exchangers of Mercury-Arc Rectifier Units

without taking the corresponding rectifier out of service. If two rectifiers are partially loaded, their cooling can be performed by one heat exchanger. Temperature fluctuations within $\pm 1.5^{\circ}\text{C}$ were observed (the thermoregulators were adjusted for $+30^{\circ}\text{C}$). Operating experience confirmed the efficiency of the interconnecting scheme which, in addition, provided an annual energy saving of about 9,200 kwh. The interconnecting scheme and its peculiarities are described.

L.A.Ch.

Card 2/2

8(4)

SOV/112-59-4-8344

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 4, p 275 (USSR)

AUTHOR: Borovitskiy, V. N.

TITLE: Rod for Replacing Electric Lamps

PERIODICAL: Elektrich. i teplovozn. tyaga, 1958, Nr 5, p 28

ABSTRACT: A rod is described for replacing electric lamps in open and semi-open luminaires situated at a considerable height. The rod consists of a bakelite tube which includes wire ties; one tie is terminated with horn-type grips for gripping the lampholder, another tie terminates with steel grips for the bulb. A long-time experience with the rod at the Pokrovsko-Streshnevo traction substation permits recommending it for wide usage.

A.A.M.

Card 1/1

BOROVITSKIY, V.N.

Railroad transportation at the Exhibition of Achievements of
the National Economy of the U.S.S.R. Zhel.-dor.transp.
43 no.9:73-76 S '61. (MIRA 14:8)

1. Zamestitel' glavnogo inzhenera-metodista upravleniya
razdela promyshlennosti i transporta Vystavki dostizheniy
narodnogo khozyaystva.
(Railroads—Exhibitions)

BOROVITSKIY, V.N.; BORISOV, M.A.; RYBAL'NIK, T.I., red.; PYATNITSKIY,
V.N., tekhn. red.

[Pavilion of the "Electrification of the U.S.S.R." a catalog
and guide] Putevoditel'-katalog Pavil'ona "Elektrifikatsiia
SSSR". Moskva, 1961. 46 p. (MIRA 15:7)

1. Moscow. Vystavka dostizheniy narodnogo khozyaystva SSSR.
Pavil'on "Elektrifikatsiya SSSR."
(Moscow--Exhibitions) (Electrification)

BOROVITSKIY, V.N.; BORISOV, M.A.; RYBAL'NIK, T.I., red.; SINYUKHIN,
V.N., tekhn. red.

[Guige to the Pavilion of the Electrification of the U.S.S.R.]
Putevoditel Pavil'ona "Elektrifikatsiia SSSR". Moskva, 1962.
46 p. (MIRA 15:7)

1. Moscow. Vystavka dostizheniy narodnogo khozyaystva SSSR.
Pavil'on "Elektrifikatsiya SSSR."
(Moscow Exhibitions) (Electrification)

BOROVITSKIY, V.N.; SMORGONSKIY, V.I., inzhener-metodist

Thematic display "Low-voltage commutation apparatus units."
Vest. elektrom. 34 no.2:77 F '63. (MIRA 16:2)

1. Direktor pavil'ona "Elektrifikatsiya SSSR" na Vystavke
dostizheniy narodnogo khozyaystva (for Borovitskiy).
(Electric switchgear)
(Commutation (Electricity))

BOROVITSKIY, V.N.; BORISOV, M.A.; SMIRNOVA, G.M.; SEDEL'NIKOV, V.I.,
red.; SERBINA, L.N.; SMIRNOVA, N.S., tekhn. red. MAYOROV,
V.V., tekhn. red.

[Economy and efficient use of electric power] Ekonomia i
ratsional'noe ispol'zovanie elektroenergii; po materialam
tematicheskoi vystavki. Moskva, VDNKh SSSR, 1962.

No.1. [In its production and distribution] Pri ee proiz-
vodstve i raspredelenii. 23 p. No.2. [In machinery
manufacturing enterprises] Na mashinostroitel'nykh predpri-
iatiakh. 27 p. No.3. [In electric transport] Na elektri-
fitsirovannom transporte. 10 p. No.4. [In metallurgy] V
metallurgii. 16 p. No.5. [In electrothermics and aluminum
elelctrolysis] V elektrotermii i pri elektrolize aluminia.
52 p. No.6. [In electrical lighting] V elektroosveshchenii.
19 p. (MIRA 16:8)

(Electric power)

BOROVITSKIY, V.N.; NARTOV, V.I.

Exhibition on "Complex low-voltage commutation apparatus." Elektro-
tehnika 34 no.12:56-57 D '63. (MIRA 17:1)

1. Direktor pavil'ona "Elektrifikatsiya SSSR" vystavki dostizheniy
narodnogo khozyaystva SSR (for Borovitskiy). 2. Starshiy inzhener-
metodist pavil'ona "Elektrofikatsiya SSSR" vystavki dostizheniy
narodnogo khozyaystva SSSR (for Nartov).

BOROVITSKIY, V.N.; OKHOTNIKOVA, Ye.V.

Topical exhibit at the Exhibition of the Achievements of the
National Economy of the U.S.S.R. Prom. energ. 19 no. 4:52
Ap '64. (MIRA 17:5)

BOROVITSKIY, V.N.

Lectures on relay protection at the Exhibition of the National
Economy Achievements of the U.S.S.R. Elek. sta. 34 no.11:95 N '63.
(MIRA 17:2)

BOROVITSKIY, V.N.

Pavilion of the "Electrification of the U.S.S.R." at the
Exhibition of the Achievements of the National Economy in 1964.
Elek. sta. 35 no. 4:91-92 Ap '64. (MIRA 17:7)

1. Direktor pavil'ona Elektrifikatsiya SSSR.

BOROVITSKIY, V.N.; CHUMACHENKO, V.N.

New topical exhibits at the Exhibition of Achievements of
the National Economy of the U.S.S.R. Elek. sta. 35 no.5:95
My '64. (MIRA 17:8)

BOROVITSKIY, V.N., inzh.

Awards presented to the participants of the Exhibition of the Achievements of the National Economy of the U.S.S.R. in 1964. Elek. sta. 35
no.8:88-89 Ag '64. (MIRA 17:12)

BOROVITSKIY, V.N.

New topical exhibition of the Exhibition of the Achievements of
the National Economy of the U.S.S.R. Elek. sta. 35 no.12:81 D '64.
(MIRA 18:2)

1. Direktor pavil'ona "Elektrifikatsiya SSSR" na Vystavke dosti-
zheniy narodnogo khozyaystva SSSR.

BCROVITSKIY, V.N.

Awards presented to power machinery builders at the Exhibition of the Achievements of the National Economy of the U.S.S.R. Energomashinostroenie 11 no.7:43-44 J1 '65. (MIRA 18:7)

1. Direktor pavil'ona "Elektrifikatsiya SSSR" na Vystavke dostizheniy narodnogo khozyaystva.

BOROVITSKIY, V.N.

New progressive methods in everyday life at the pavilion "Electrification of the U.S.S.R." of the Exhibition of the Achievements of the National Economy of the U.S.S.R. Energetik. 13 no.4:29-30 Ap '65. (MIRA 18:6)

2. Direktor pavil'ona "Elektrifikatsiya SSSR" Vystavki dostizheniy narodnogo khozyaystva SSSR.

BOROVITSKIY, V.N.

Prevention of errors in checking relay protection devices using a VAF-85
voltampere-phase indicator. Elek. sta. 36 no.6:93-94 Je '65.

(MIRA 18:7)

1. Direktor pavil'ona "Elektrifikatsiya SSSR" Vystavki dostizheniy
narodnogo khozyaystva.

MAKSIMOV, Vasilii Mikhaylovich, dotsent, kand.geologo-miner.nauk; ASATUR, K.G., dotsent, kand.tekhn.nauk; DAVIDOVICH, V.I., dotsent, kand.tekhn.nauk; AEBUL, S.P., kand.geologo-miner.nauk; PAUKER, N.G., inzh.-gidrogeolog; OSTROUMOV, B.P., gidrotekhnik; ZAYTSEV, I.K., doktor geologo-miner.nauk; TOLSTIKHIN, N.I., prof., doktor geologo-mineral.nauk; REZNIKOV, A.A., kand.khim.nauk, starshiy nauchnyy sotrudnik; MERSHALOV, A.F., assistant; VOROTYNTSEV, V.T., dotsent, kand.tekhn.nauk; MARKOV, I.A., dotsent, kand.geologo-miner.nauk; KERKIS, Ye.Ye., dotsent, kand.geologo-miner.nauk; KHITROV, I.N., inzh.-geolog; ~~BOBOVITSKIY, N.D.~~, kand.geologo-miner.nauk; RAVDONIKAS, O.V., kand.geologo-miner.nauk; ONIN, N.M., kand.geologo-miner.nauk; BASKOV, Ye.A., inzh.-gidrogeolog; NOVOZHILOV, V.N., dotsent, kand.geologo-miner.nauk; PEKEL'NIYY, I.S., inzh.-gidrogeolog; NEVEL'SHTEYN, Yu.G., inzh.-gidrogeolog; BOSKIS, S.G., inzh.-gidrotekhnik; NIKIFOROV, Ye.M., inzh.-gidrogeolog; GATAL'SKIY, M.A., prof., doktor geologo-miner.nauk, nauchnyy red.; DOLMATOV, P.S., vedushchiy red.; GEN-NAD'YEVA, I.M., tekhn.red.

[Hydrologist's handbook] Spravochnoe rukovodstvo gidrogeologa.
Leningrad, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry,
Leningr.otd-nie, 1959. 836 p. (MIRA 12:4)

1. Vsesoyuznyy geologicheskii nauchno-issledovatel'skiy institut
(for Reznikov).

(Hydrology)

ANSBERG, Ye.A., assistant; BOROVITSKIY, V.P., dots.; BUTS, Sh.F., dots.; Prinsipali uchastiye: SERGEYEV, V.A., dots.; SAMARINA, V.S., st. nauchn. sotr.; SKORYNINA, N.P., red.

[Practice in general hydrogeology] Praktikum po obshchei gidrogeologii. Leningrad, Izd-vo Leningr. univ., 1965. 231 p. (MIRA 18:4)

1. Kafedra gidrogeologii Leningradskogo gosudarstvennogo universiteta im. A.A.Zhdanova (for Buts, Ansberg, Sergeyev).
2. Institut Zemnoy kory, Leningrad (for Samarina).
3. Gornyy institut, Leningrad (for Borovitskiy).