

NIKOLAYEV, I.N.

Three cases of choriocarcinoma of the uterus. Kas.med.shur. 40  
no.4:84-86 J1-Ag '99. (MIRA 13:2)

1. In ginekologicheskogo otdeleniya (soveduyushchiy - A.D. Burkova)  
Chobekarskogo roddoma (glavvrach - I.N. Nikolayev).  
(UTERUS--CANCER)

NIKOLAYEV, I.N. (Stantsiya Gatchina, Oktyabr'skoy dorogi); DUBOVSKIY, V.Yu.;  
Inzh.po mekhanizatsii (Stantsiya Gatchina, Oktyabr'skoy dorogi)

Why aren't track-mounted alignment machines motorized?  
Pat' i pat.khes. 5 no.7:23 J1 '61. (MIRA 14:10)

1. Zametitel' mekhal'nika Gatchinskoy distantsii Oktyabr'skoy dorogi (for Nikolayev).  
(Railroads—Equipment and supplies)

26722  
S/056/61/041/005/037/038  
B109/B102

24.2600

AUTHORS: Kikoin, I. K., Nikolayev, I. N.

TITLE: The photomagnetic effect in a p-n junction

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41,  
no. 5(11), 1961, 1692-1694

TEXT: Studies of the photomagnetic effect in semiconductors suggested a photomagnetic effect in the blocking layer between semiconductor and metal contact when the contacts are illuminated. In order to elucidate this, the following experiment has been made: A piece of n-type germanium (10 by 4 by 4 mm) had a diffusional p-n junction (due to diffusion of indium) on the one front face (4 by 4), and an ohmic contact (tin) on the other. The photomagnetic e.m.f. was measured between these contacts while the sample was illuminated and exposed to a magnetic field. This e.m.f. consists of the voltage along the homogeneous part of the sample and of the potential difference at the p-n junction. These two portions can be distinguished because the voltage along the homogeneous part depends on the area of the illuminated surface, which, e.g., may more or less be

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15 8460 also 2209

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AUTHORS: Popov, V. A., Nikolayev, I. N., Smirnov, R. N.,  
Kondrat'yeva, V. A.

TITLE: Production of heat-resistant polymers by pyrolysis. Foam  
cokes

PERIODICAL: Plasticheskiye massy, no. 9, 1961, 26-28

TEXT: The authors produced heat-resistant foamed materials by coking various gas-filled plastics. Initial foamed-material specimens were placed in a special mixture, [Abstracter's note: not indentified.] and uniformly heated to a temperature exceeding that of their pyrolysis; then they were again uniformly cooled to room temperature. The material did not come in contact with air, and the volatile products were removed. The authors found that the original configuration of the initial specimen may be preserved with uniform reduction of all dimensions in an oriented position with respect to the thermal field. The relations between chemical structure, behavior in pyrolysis, and properties of foam cokes were determined. Foamed materials of linear thermoplastic (polystyrene, polyvinyl chloride) and linear, weakly thermosetting polymers (polyurethane, epoxy resins) were  
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Production of heat-resistant...

latter (particularly C-containing fillers, such as graphite, carbon black, coke) change the yield in volatile pyrolysis products considerably. They improve the stability of geometric dimensions, mechanical strength, and electrodynamic parameters of foam cokes but reduce their compressive strength at high temperatures.) Finely disperse Al powder added is supposed to react with radicals formed in pyrolysis. Al,  $Al_2O_3$ ,  $SiO_2$  do not affect the yield in volatile products, but reduce the compressive strength at high temperatures. Carbon-containing fillers increase the yield in foam cokes, and reduce the heat resistance to deformation. Metal salts of orthosilicic acid ( $ZrSiO_4$ ,  $CaSiO_4$ ) increase the strength at high temperatures. FK-20

foam cokes with and without fillers preserve, during pyrolysis, their original structure. Microphotographic studies have shown that the characteristic features of the foam structure such as distribution of unit cells, presence or absence of cavities and cracks, etc., remain practically unchanged in pyrolysis. The authors suggest the use of foam cokes as light, highly heat-resistant, heat-insulating materials chemically resistant and heat-resistant sorbents, electrical engineering materials and catalyst supporters. There are 3 figures, 4 tables, and 8 references: 7 Soviet and 1 non-Soviet. X

Card 3/5

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Production of heat-resistant...

Table 4. Physicomechanical properties of FK-20 foamed plastics containing different fillers, before and after coking. Legend: (1) filler, (2) filler amount, %, (3) volume weight,  $g/cm^3$ , (4) specimen weight, g, (5) loss in weight, (6) yield in foam coke, % by weight, (7) specimen dimensions after coking, mm, (8) compressive strength limit after 1 hr heating to  $300^\circ C$ ,  $kg/cm^2$ , (9) before coking, (10) after coking, (11) without filler, (12) without filler, (13) Al powder, (14) industrial  $Al_2O_3$ , (15)  $Al_2O_3 \cdot SiO_2$ , (16) chemically pure  $SiO_2$  (no. 171), (17)  $ZrSiO_4$  mineral, (18) ditto, (19)  $CaSiO_4$  mineral, (20) industrial graphite, (21) acetylene black, (22) carbon black no. 137, (23) coke of foamed plastic FK-20.

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GRINBERG, A.A.; NIKOLAYEV, I.N.

On the photomagnetic effect on a p-n junction. Dokl. AN SSSR  
147 no. 5:1077-1080 B '62. (NIRA 16:2)

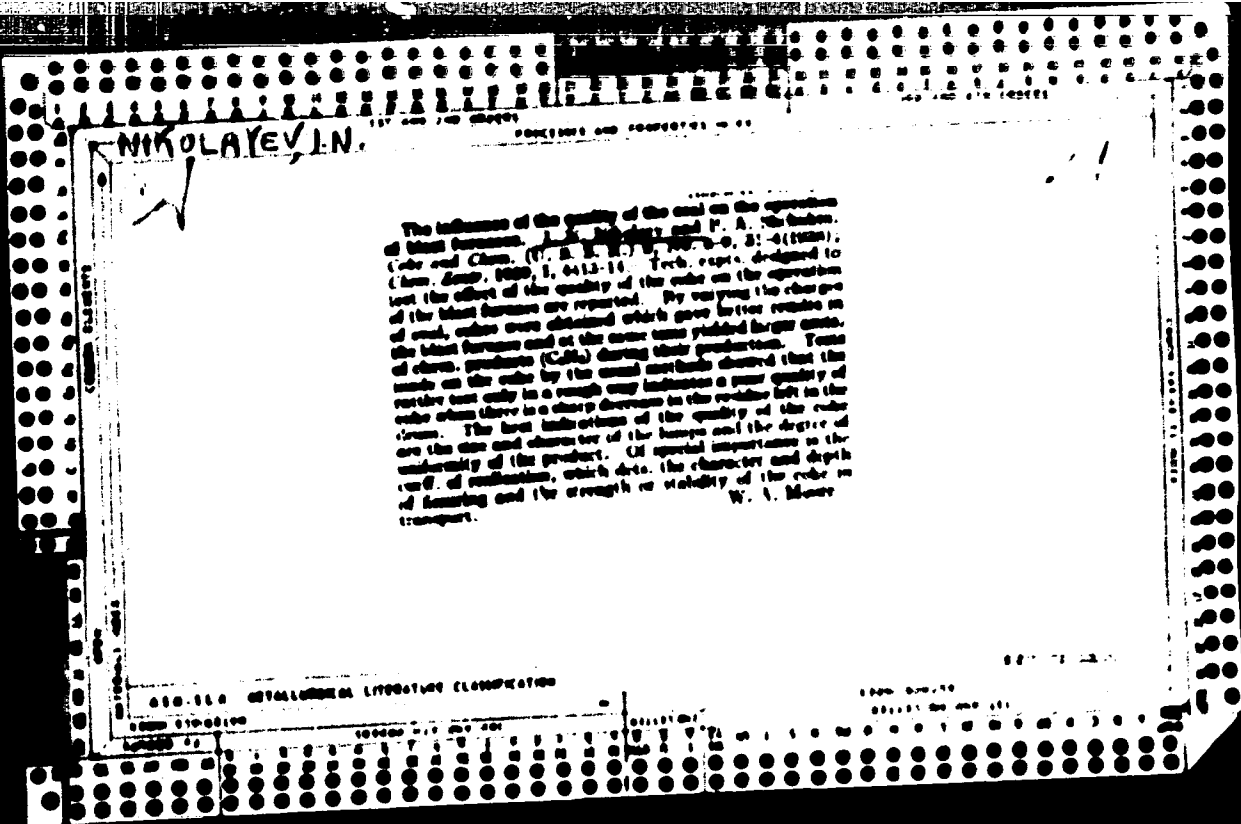
1. Moskviskiy gosudarstvennyy universitet im. M.V. Lomonosova i  
Fiziko-tekhnicheskiy institut im. A.P. Koffe AN SSSR, Predstavleno  
akademikom I.K. Kikoinym.

(Photomagnetic effect) (Junction transistors)

NIKOLAYEV, I.N.

Photomagnetic effects in germanium in high magnetic fields. Zhur.  
eksp. i teor. fiz. 45 no.5:1678-1680 N '63. (MIRA 17:1)





NIKOLAËV, I. N.

NIKOLAËV, I. N.

PA 2177

Coke

"North Caucasian Coal and the Production of Coke from It," I. N. Nikolaev, 6 pp

"Razvedka Nedr" No 3

Experiments were conducted on coals of the Bol-she-Labin, Tolsto-Bugor, and Khumarin beds to determine their properties. The coal of the Tolsto-Bugor bed appeared to be the best for producing coke. Coal from these beds must be condensed for use in a furnace.

Миклушечин, В. П.  
off

21

Caking properties of coals with a high yield of volatile matter. I. N. Nishchay. *Instit. Akad. Nauk SSSR, Izv. Tsent. Nauch. Inst. 1969, 7:70-77*. Samples of coal high in volatile matter, mined from various points of two different coal seams were evaluated by lab. tests and by rolling on coal-industrial coals in boxes and finally in coke ovens. Strictly from the viewpoint of hydraulics, the quality of coke in respect to its phys. and mech. properties is expressed by a complex factor representative of the gas permeability of the mass of coke to the passage of gases or, conversely, by its resistance to gas flow. This factor can be approx. calcd. from the vol. of the free interstices between the lumps and from their surface. The samples from one of the seams gave fairly large, strong lumps of coke, but those from the other seam did not. A mist. of the two, having a mean temp. interval of plasticity and a min. temp. interval for the formation of a solid phase, yielded good metallurgical coke on rolling in boxes and in ovens. B. C. Metzger

Inst. Combustible Fuels, Acad. Sci/ USSR

(1969)

1951

CA NIKOLAYEV, I.I.

21

Evaluation of the quality of metallurgical casts on the basis of the hydraulic principle. K. I. Nikolayev and I. N. Nikolayev (Acad. Sci. U.S.S.R., Moscow). *Izv. Akad. Nauk S.S.S.R., (Met. Fabr. Mash. 1959, 1197-1200)* - Quality is evaluated by coeff. of resistance  $\delta$  against flow of gases through a heap of cubes in accordance with  $\delta = 100 \alpha (2 + \beta \alpha)$  where  $\delta = (v + 1000/v)^2 / (v + 1000) \sqrt{S}$  and  $\beta = 200 / (v + 1000) \sqrt{S}$ . For a cube of cube pieces weighing 1 kg,  $\alpha$  is the surface of the pieces and  $v$  is the vol. of the free spaces between the pieces. The coeffs.  $\alpha$  and  $\beta$  can be obtained from tables; the values of  $v$  and  $\alpha$  are calcd. on the basis of screen analysis (example given). The method is applicable to cube casts (conditions corresponding to those in the hearth of the blast furnace). Expts. have shown that after 120 s p.m. in standstill down, screen analysis is quite close to that of cube removed from the hearth through the taphole. Besides of the cube after the test in the standstill down does not characterize, with sufficient accuracy, the strength of the cube, which must be ruled from data of changes in screen analysis. R. Z. Kamich

Letopis' Zhurnal'nykh Statey, Vol 36, 1949

1951

NIKOLAYEV, I.N.

**USSR/Past - Coals, Coking**

**May 52**

**"Laboratory Method for Determining the Coking Capacity of Coals," I. N. Nikolayev**

**"In Akhmat 2022, Otdel Tekh Nauk" No 5, pp 749-759**

**Describes method which actually provides for modeling industrial process on laboratory scale. Method evaluates coking capacity of coal directly by quality of coke obtained from given coal, i.e., by quality of final product of coking process. Wide possibilities for regulating thermal conditions of furnace and grade of coal, such as concn, crushing and various admixts, permit detg optimum conditions for producing high-quality coke. Submitted by Acad N. P. Chishovskiy  
22.02.52.**

(CA 47 no. 22: 12789 '53)

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NIKOLAYEV, J. S.

New techniques for cleaning parabolic bunkers. *Vosp. truda v  
prom.* 3 no. 5:32 Ny '59. (MIRA 12:8)

1. Glavnyy mekhanik Novo-Grishevskoy obogatitel'noy fabriki.  
(Coal storage)

BRISLER, A.Ye. (deceased); LETOVA, V.E.; NIKOLAYEV, I.N.

Prospects for the utilization of Minusinsk Basin coals for the  
preparation of metallurgical fuel. Trudy IGI 10:66-73 '59.  
(MIRA 12:12)

(Minusinsk Basin--Coal) (Coke)



KALINKINA, V.A. (Moskva), KOSELOVA, N.I. (Moskva), NIKOLAYEV, I.N. (Moskva),  
STEPANCHIKOV, A.A. (Moskva)

Investigating the thermal decomposition of coals and their mixtures.  
Izv. AN SSSR. Otd. tekhn. nauk. Ser. 1, topl. no.6:156-160 M-D '60.  
(MIRA 13:12)

(Coal--Carbonisation)

NIKOLAYEV, I. N.; STEPANCHIKOV, A. A.; DAVYDOVA, K. I.; KOZLOVA, K. I.;  
KALINKINA, V. A.; SMIRNOVA, N. I.

Method for the direct determination of the coking capacity of coals  
and charges. Coke 1 khim. no. 11:9-15 '60. (NIDA 13:11)

1. Institut goryuchikh iskopayemykh AN SSSR.  
(Coal--Testing) (Coke)

NIKOLAYEV, I.M.; KOZLOVA, N.I.; MALINKINA, V.A.; STEPANCHIKOV, A.A.

Heat capacity of coals and coal mixtures as determined by the  
temperature of their heating. Koks. i khim. no. 3:12-15 '61.  
(MIRA 14:4)

1. Institut geryuchikh iskopayemykh AN SSSR.  
(Coal—Thermal properties)

DAVYDOVA, K.I.; NIKOLAYEV, I.N.

Chemical and technical properties of coal from the Tunguy Depression.  
Izv.Sib.otsd.AN SSSR no.4:26-37 '61. (MIRA 14:6)

1. Institut gornykh iskopayemykh AN SSSR, Moskva.  
(Tunguy Valley--Coal)

NIKOLAYEV, I.N.

Mechanizing the sampling and preparation of solid fuel specimens.  
Standartizatsia 25 no. 5:51 My '61. (MIRA 14:5)  
(Coal.—Testing—Standards)

NIKOLAYEV, I.N.

Taking fuel samples from conveyers. Standartizatsia 25 no.11:  
~~44-45~~ N '61. (MIRA 14:11)

(Coal--Testing--Standards)

NIKOLAYEV, I. N.; KOZLOVA, H. I.

Effect of the thermal pretreatment of coals on their caking  
capacity. Trudy IGI 17:116-120 '62. (MIRA 15:10)

(Coal—Carbonization)

OMUSAYTIS, B. A.; NIKOLAYEV, I. N.; DAVIDOVA, KI I.; KULIKOVSKAYA, A. V.;  
PETROVICH, A. I.

Characteristics of some Eastern Siberian coals. Trudy IGI 17:  
121-128 '62. (MIRA 15:10)

(Siberia, Eastern—Coal)



NIKOLAYEV, I.N.

Mechanized testing of coal. Standartizatsia 26 no.4:34-36 Ap  
'62. (MIRA 15:3)

(Coal--Testing)

NIKOLAYEV, I.N.

Peat briquets. Standartizatsia 26 no.6:44-46 Jo '62.  
(MIRA 15:7)  
(Briquets (Fuel)—Standards)

NIKOLAYEV, Ivan Nikitich; SAPOZHNIKOV, L.M., otv. red.

[Using coal from regions of the U.S.S.R. as a possible raw material for the production of metallurgical coke]  
Ugli vostochnykh raionov SSSR kak vozmozhnoe syr'e dlia proizvodstva metallurgicheskogo koksa. Moskva, Nauka, 1964. 86 p. (MIRA 17:9)

1. Chlen-korrespondent AN SSSR (for Sapozhnikov).

NIKOLAYEV, I.N.

Effect of certain methods of preliminary coal preparation on  
the coking process. Trudy IGI 20:178-188 '63. (MIFA 17:8)

NIKOLAYEV, I.P.

Composition and structure of the Devonian Pashlya beds in the  
Tuznasy oil fields. Uch.zap.Kaz.un. 115 no.16:3-11 '56.

(MLRA 10:3)

1. Trst Tuznaseft'.

(Tuznasy--Geology, Stratigraphic)

93-58-3-10/17

**AUTHOR:** Zhelonkin, A. I., and Nikolayev, I. P.

**TITLE:** Chief Physical Properties of Reservoir Crude and Water and Their Variation in the D<sub>1</sub> Formation of the Tuznasy Oilfield (Osnovnyye fizicheskiye parametry plastovoy nefi i vody i ikh izmeneniye po plastu D<sub>1</sub> Tuznasskogo neftyanogo mestorozhdeniya)

**PERIODICAL:** Neftyanoye khozyaystvo, 1958, Nr 3, pp 42-45 (USSR)

**ABSTRACT:** The article describes a study of the D<sub>1</sub> formation at the Tuznasy oilfield. The study which was carried out by the Ufa Scientific Research Institute Laboratory (Laboratoriya UFNIL) under the direction of Ye. A. Sakhankin and by the Central Scientific Research Laboratory (TsNIL) of the Tuznasy Petroleum Administration (MPU Tuznassneft'), determined that the reservoir saturation pressure varies with the distance from the center as shown on the isobar map. Table 1 shows that the centrally located wells have a high saturation pressure accompanied by a high gas factor, a high reservoir volume, a high shrinkage, and a high thermal expansion. The wells located on the periphery of the formation have a saturation pressure which decreases with the distance from the center and the decrease

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Chief Physical Properties of Reservoir Crude (Cont.)

93-58-3-10/17

in the saturation pressure is accompanied by a decrease in the gas factor, reservoir volume, shrinkage and thermal expansion. Table 2 shows the dependence of the composition and quantity of the gas diluted in the reservoir oil on the oil well distance from the center of the formation. The author states that D<sub>1</sub> formation of the Tuzmaz oilfield has been inadequately studied and that the present study will aid in the further exploitation of this oilfield. There are 2 tables and 1 isobar map.

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Card 2/2

NIKOLAYEV, I.S.

Operations on the focus in tuberculous spondylitis by the trans-  
pleural approach. Ortop. travn. i protez. no. 618-12 '61.

(MIRA 14:8)

1. Is Gor'kovskogo oblastnogo protivotuberkuleznogo dispansera  
(glavnyy vrach - A.Ya. Sheftal', nauchnyy rukovoditel' - nauch.  
doktor nauki prof. B.A. Korolev).

(SPINE--TUBERCULOSIS)



NIKOLAYEV, I.S., inzhener-polkovnik; KOTELAVETS, D.I., inzhener-  
podpolkovnik

This can be done at every field meteorological station. Vest.  
Vost.Fl. no.6:79 Jo '61. (MIRA 14:8)  
(Meteorology in aeronautics)

NIKOLAYEV, I. S.

PETUKHOV, L. O. - Kand. Arkhitektury, IVANOV, V. T., Arkh., NIKOLAYEV, I. S., Chl.-  
Korr. Akademii Arkhitektury SSSR D-R Arkhitektury Prof., BAZARNOV, V. N. - Arkh.

Nauchno-issledovatel'skiy Institut Arkhitektury Obshchestvennykh i Promyshlennyykh  
sooruzheniy Akademii Arkhitektury SSSR

Promyshlennyye predpriyatiya

Page 62

SO: Collection of Annotations of Scientific Research Work on Construction, completed  
in 1950.  
Moscow, 1951

NIKOLAYEV, I. S.

PAVLICHENKOV, N. I. - arkh. i NIKOLAYEV, I. S. - chl. - korr. Akademii  
arkhitektury SSSR. d-r arkhitektury prof.

Nauchno-issledovatel'skiy Institut Arkhitektury i Promyshlennyykh sooruzheniy  
akademii arkhitektury SSSR

Osnovnyye ploskaniya po razmeshcheniyu kinoteatrov v mnogostanovnykh zhilykh  
domakh Moskvy,

SO: Collection of Annotations of Scientific Research Work on Construction, com-  
piled in 1951, Moscow, 1951

STRELETSKIY, N.S., prof., doktor tekhn.nauk; GRISHIN, M.M., prof., doktor tekhn.nauk; NIKOLAYEV, I.S., prof., doktor arkhitektury

Development of construction engineering in the field of building and structure design (1917-1957). Nauch.dokl.vys.shkoly; strel. no.187-21 '58. (MIRA 12:1)

1. Chlen-korrespondent AN SSSR (for Streletskiy). 2. Deyatel'nyy chlen Akademii stroitel'stva i arkhitektury (for all).  
(Building)

НИКОЛАЕВИЧ, Иер' Владимирович; БАРЕНКОВ, А.А.; КАРПОВ, I.V.; КАРТСЕВ,  
I.T.; КИТЛОВ, Н.М.; СИДЛАВЫЙ, I.L.; КИВИЧ, V.I.; ШЕВЯКОВ, V.A.;  
ШОКНИН, O.A.; ЧУБОВ, A.I.; ГОРОДНИЧЕВ, Н.О., редактор; ЧЕРНЫШЕВ,  
V.I., редактор; КИТРОВ, P.A., технический редактор

[General course on railroads] Obshchii kurs sholesnykh dorog. Izd.  
2-o, perer. Moskva, Gos. transportnoe shel-der. izd-vo, 1954. 316 p.  
(Railroads) (MLRA 8:3)

MODZOLEVSKIY, Igor' Vladimirovich, inzh.; BARSKOV, A.A.; KARPOV, I.V.;  
KARTSEV, I.T.; KRYLOV, N.M.; NIKOLAYEV, I.V.; RYVICH, V.I.;  
SHIVYAKOV, V.A.; SHOKHIN, O.B.; CHUBOV, A.I.; GUBAREVA, N.T.,  
red.; BOBKOVA, Ye.N., tekhn.red.

[General course in railroad engineering] Obshchii kurs sholesnykh  
dorog. 1ed.]., perer. Fed obshchrei red. I.V.Modzolevskogo.  
Moskva, Vses.isdatel'sko-poligr.ob'edinenie M-vs putei soobshcheniia,  
1960. 290 p. (MIRA 13:12)

(Railroad engineering)

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5/135/63/000/002/009/015  
A006/A101

1.1100

**AUTHORS:** Shapiro, I. S., Antokhina, R. I., Nikolayev, I. V., Engineers

**TITLE:** Underwater gas arc cutting of metals

**PERIODICAL:** Svarochnoye proizvodstvo, no. 2, 1963, 27 - 28

**TEXT:** Special tests have been carried out at VNIIVTOGEN in 1961, to study the possibility of using gas arc cutting for underwater metal cutting. The YDP -2M (UDR-2M) cutting device was used in a 140-liter water container. The auxiliary arc was excited, after immersing the cutter into the water, or in the air. The second method proved more satisfactory, since the service life of insulation bushings was increased. Visual observations showed that the burning of the arc was sufficiently stable. However, the cutting ability of the arc was less efficient in water than in air. The velocity of the process was reduced by 40 - 50% when cutting up to 30 mm steels in water. The effect of the gas upon the cut surface was studied with several gases and mixtures. The cutting speed was 57 mm/min for argon; 295 for argon with hydrogen; 255 for argon with nitrogen; 275 for nitrogen and 255 mm/min for nitrogen with hydrogen. Although highest cutting efficiency is obtained with an argon-hydrogen mixture, the qual-

Card 1/2

NIKOLAIEV, I.V. Anal.

Technological and economic considerations in the operation of  
converter systems. Atom. energ. 18 no.9:2-4 3 '63. (MIRA 16:16)



ACC NR: APT002566 (A,N) SOURCE CODE: UR/0413/66/000/023/0054/0054

INVENTOR: Nikolayev, I.V.; Firshin, I.V.

ORG: none

TITLE: Light modulator. Class 21, No. 189085

SOURCE: Izobreteniya, promyshlennyye obrabotki, tovarnyye znaki, no. 23, 1966, 54

TOPIC TAGS: light modulator, light communication, interference light modulator, modulator, OPTIC CRYSTAL.

ABSTRACT: An Author Certificate has been issued for an interference-type light modulator containing a polarizer, reflecting mirrors, and transversely-cut electro-optical crystals which are placed in the shf resonator. To compensate for temperature and mechanical effects, the crystals are placed along a closed curve; the distance between crystal centers is equal to  $\lambda(2m-1)/2 + \lambda/2n$ , where  $\lambda$  is the shf wavelength in air;  $m$ , the positive integers 1, 2, 3...;  $l$ , crystal length; and  $n$ , refractive index. After passing the light divider the light beams are propagated in opposite

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621.375.8  
UDC: 621.376.9

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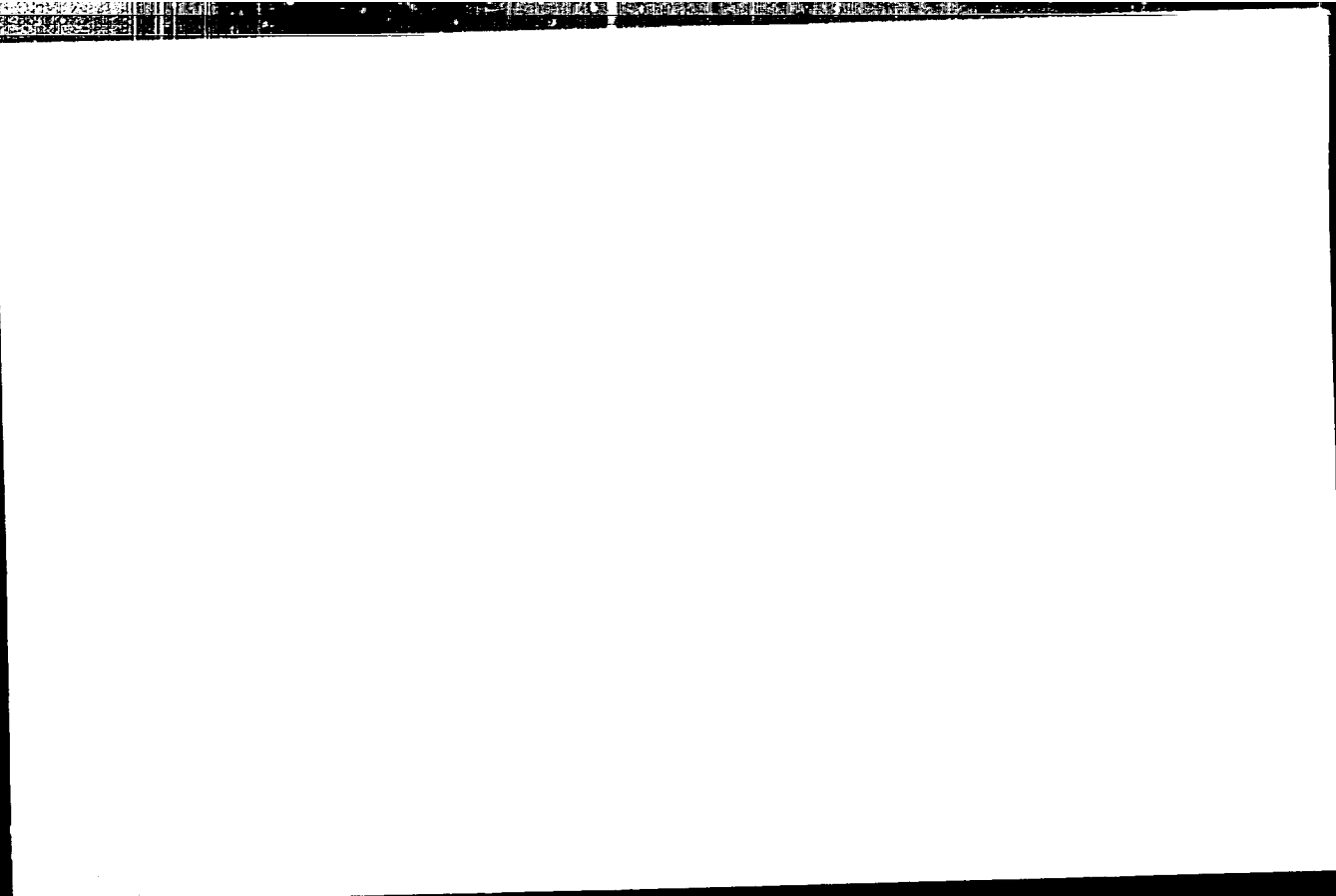
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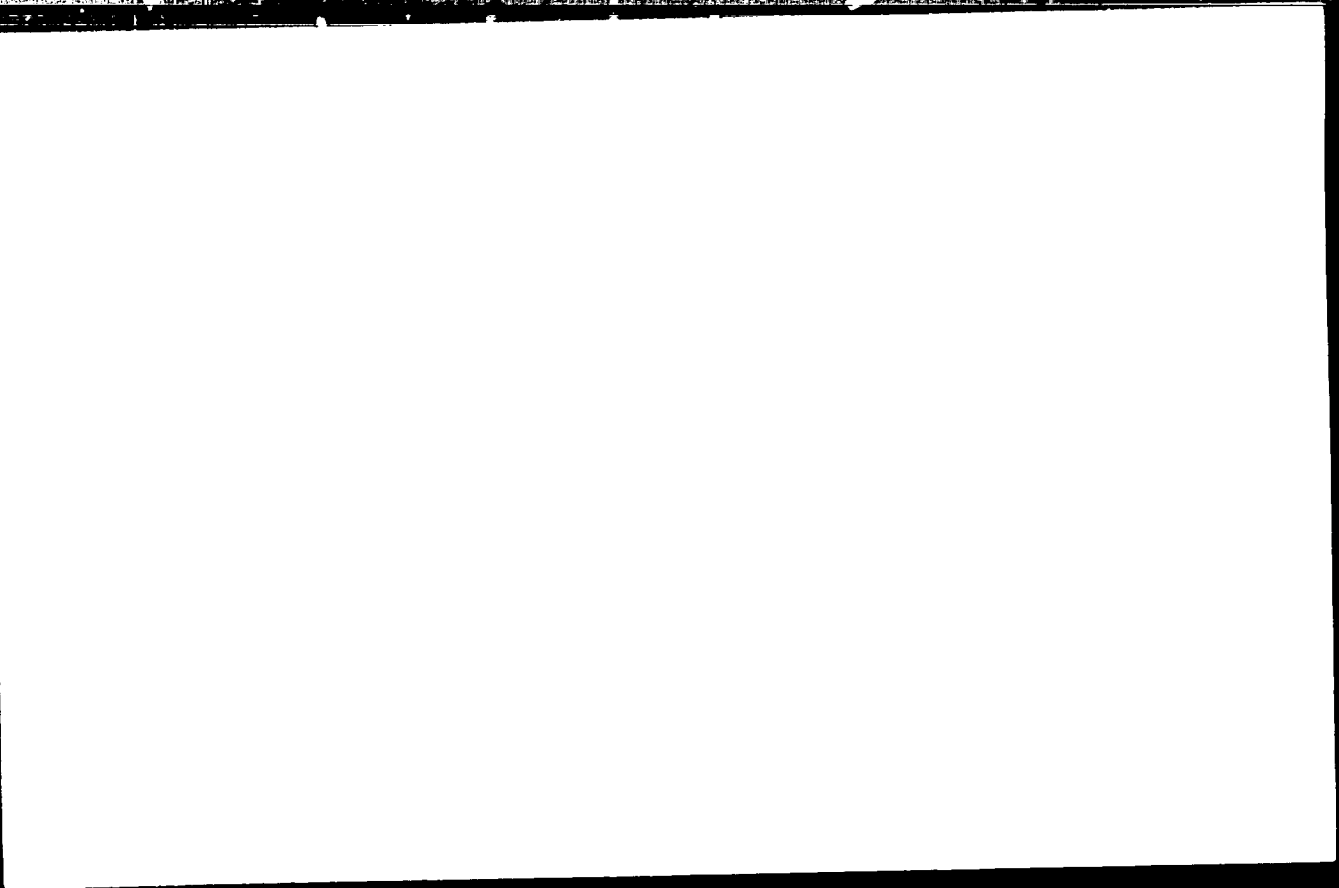


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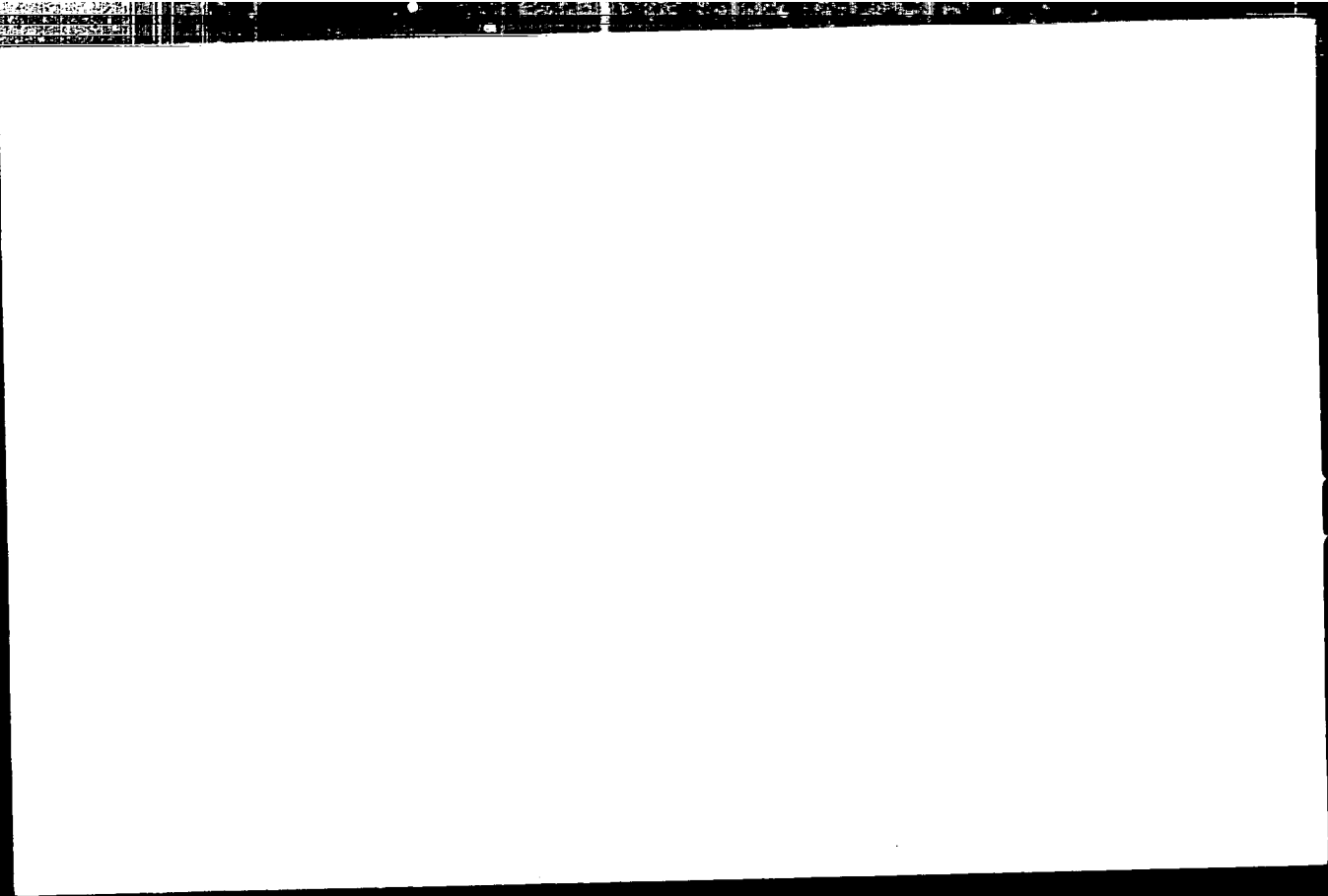


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HAS





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NEWSMONTH

"an ode to sand, snow,  
and dead Russian authors.

AND THIS AIN'T  
NO GRADE B  
WESTERN FILM  
NEITHER

R+B's NEXT FILM  
WILL BE  
"SEX AND RIN TIN TIN"  
LOOK FOR IT AT YOUR  
FAVORITE THEATER  
SOON...

Иришты, К., Сл.

18.10.1955

Учебно-методические

Aug 55

Navigation, Aerial  
Flight Training

"Navigational Plotting of Flight," Col K.  
Nikolayev, 3 PP

"Vost Vozdush Flota" No 8 (954)

Describes navigation problems for air force  
officer training.

30V/84-58-10-7/54

**AUTHOR:** Nikolayev, K., Nikitin, Yu.

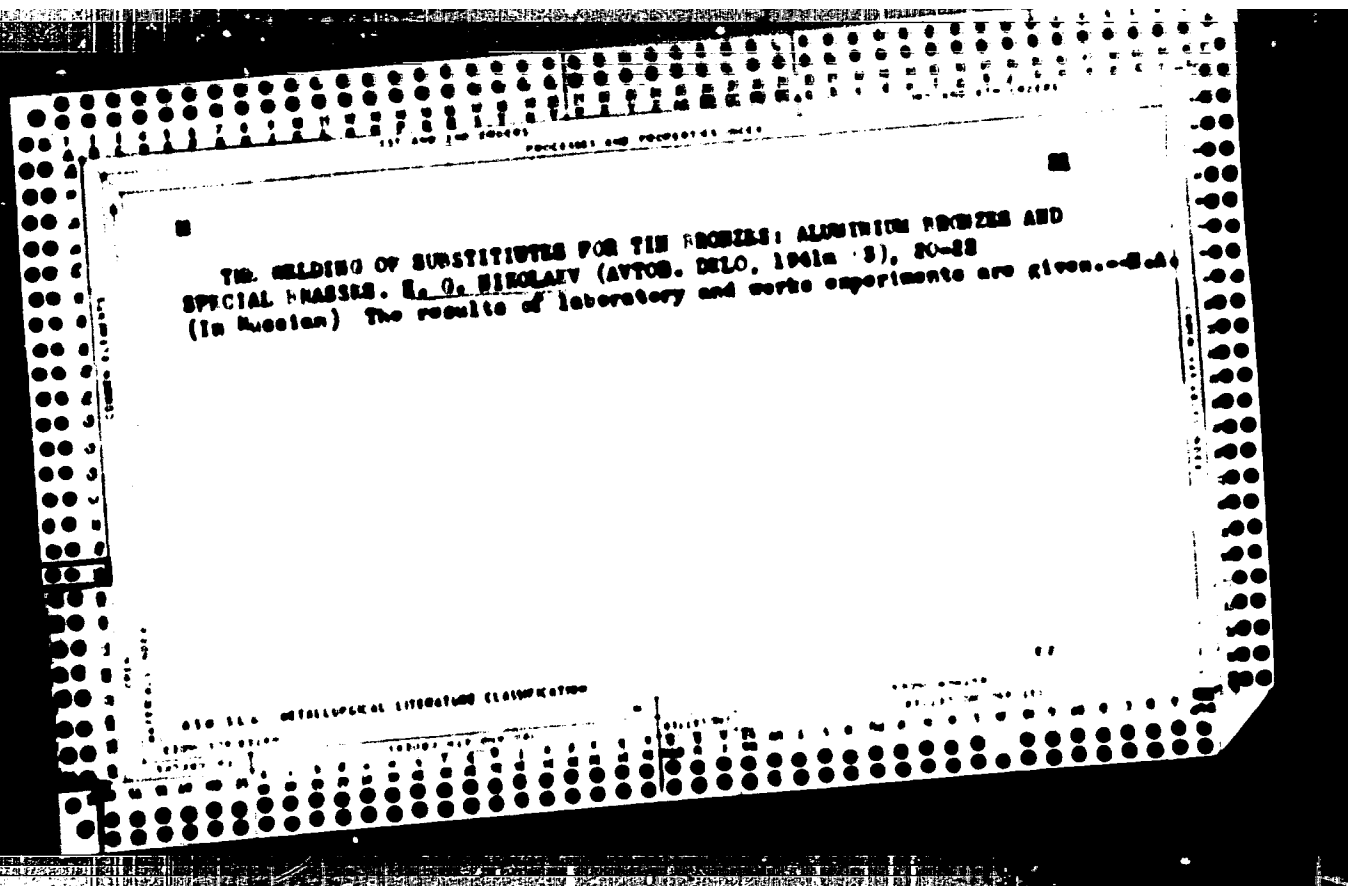
**TITLE:** On Main Air Routes (Na magistral'nykh vozdushnykh trassakh)

**PERIODICAL:** Grazhdanskaya aviatsiya. 1958, Nr 10, p 5 (USSR)

**ABSTRACT:** The authors review the progress made by jet passenger aircraft since 15 September 1956, when a Tu-104 left Vnukovo airfield on its first transcontinental flight. Today the Tu-104 exclusively services passenger transportation on the Moscow-Khabarovsk and Moscow - Tashkent routes and will soon begin making regular flights to Vladivostok. Jet passenger aircraft also maintain regular schedules on several international air routes - (Moscow - Peking, Moscow - Prague), and, beginning 1958, have included flights to Albania, Denmark, Belgium, France, Holland, and India. A map shows the cities visited by Tu-104 since it went into operation two years ago.

Card 1/1





**HEL'CHUK, G.A.**, kandidat **tehnicheskikh nauk**; **NIKOLAYEV, K.G.**, kandidat  
tekh. nauk, **retsensent**; **SAGALOVICH, D.N.**, **Iskhodnyy, redaktor**;  
**FRANKEN, P.S.**, **tehnicheskyy redaktor**

[Welded seams and joints in ship hulls] **Svarnye shvy i svedeniya**  
**Korpusa Guma. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit.**  
**i sudostroit. lit-ry, 1954. 127 p.** (MLRA 8:1)  
(Shipbuilding) (Welding)



AID P - 5267

**Subject** : USSR/Engineering

**Card 1/1** Pub. 107-a - 3/18

**Authors** : Nikolayev, K. G., Kand. of Tech. Sci. and B. A. Gololobov,  
Eng. (TsNIITS)<sup>AV</sup>

**Title** : Detection of possible cracks in welded joints of vessels

**Periodical** : Svar. proizv., 9, 9-12, S 1956

**Abstract** : The authors describe the methods and tests developed by the Central Scientific Research Institute of Shipbuilding Technique for determination of thickness of welded steel, number of welding travels, rigidity of welded sheets, thermal processes, initial temperature in base metal, etc. Many of these methods now are adapted in the shipbuilding industry. Two tables, 2 photos, 2 drawings, 2 graphs. 1 Russian reference.

**Institution** : TsNIITS (Central Scientific Research Institute of Shipbuilding Technology probable expanded translation).

**Submitted** : No date

GOLDBERG, Boris Andreyevich; NIKOLAYEV, Konstantin Georgiyevich;  
BEL'CHUK, G.A., kand. tekhn. nauk, rotsenzent; GNICOR'YEV,  
A.A., kand. tekhn. nau nauchn. red.; SOSIPATROV, O.A.,  
red.

[Properties of welded joints in hull steels] Svoistva svar-  
nykh soedinenii korpusnykh stali. Leningrad, Sudostroyeniye,  
1964. 239 p. (DIRA 17:8)



20471-65

ACCESSION NR. AM4046251

- Introduction -- 3
- Ch. I. Methods of determining the properties of weldments -- 10
- a. II. Properties of weldments of ordinary carbon steel and low alloy steels of the SKh1 type -- 10
- a. III. Properties of weldments of new ball steels -- 17
- a. IV. Properties of weldments made by new welding methods -- 30
- Ch. V. Ageing of weldment metal -- 90
- a. VI. Weldment strength in dynamic loading -- 99
- a. VII. Fatigue strength of weldments -- 124
- Ch. VIII. Corrosion resistance of weldments in sea water -- 131
- a. IX. Effect of alloying elements on the mechanical properties of the weld metal -- 156
- Ch. X. Effect of welding regimes and other factors on the mechanical properties of the weldment -- 172
- Ch. XI. Effect of temperature of the metal during welding on the properties of the weldment -- 186

SUB CODE: MM

SUBMITTED: 09Apr64

NR REF SOV: 087

OTHER: 019

Card 2/2

NIKOLAYEV, K.I. Cand Tech Sci (diss) *Problems with calculation of*  
massive structures <sup>upon</sup> ~~at~~ <sup>action</sup> ~~the effects~~ of seismic forces." Ashkhabad, *"Aspects of designing*  
1956 13 pp 22 cm. (Sci ~~Research~~ <sup>Central</sup> Inst <sup>of</sup> Indust <sup>and</sup> ~~Engineering~~ <sup>Struct.</sup> ~~ENIP~~),  
100 copies  
(KL, 11-57, 98)

*НИКОЛАЕВ, К.И.*  
NIKOLAYEV, K.I.

Calculation of massive structures with regard to their seismic stability. Iss. *AN Turk. SSR* no.6:16-22 '57. (NIRA 11:1)

1. Institut antisaymicheskogo stroitel'stva *AN Turkmenkey SSR*.  
(Earthquake and building)

307/169-59-3-2224

Translation from: Referativnyy zhurnal, Geofizika, 1959, Nr 3, p 23 (USSR)

**AUTHOR:** Nikolayev, K.I.

**TITLE:** The Application of B.B. Golitsyn's Problem to the Calculation of Solid Structures for the Action of Seismic Forces

**PERIODICAL:** Tr. In-ta antiseysnich. str-va AS TurkmSSR, 1958, Vol 2, pp 3-44

**ABSTRACT:** Solid structures consist of a foundation and an upper structure. According to B.B. Golitsyn's method, the equilibrium of the upper structure is examined in respect to the foundation at the moment when the tilting begins. The conditions are established under which a tilting cannot begin. The problem is solved mathematically in a general form for a solid structure of arbitrary configuration having an arbitrary type of elastic base, provided the motion of the base can be expressed in the form of a theoretical relationship. Assuming a base model according to the hypothesis of the bed coefficient and the ground motion as a damped sine curve, the author gives numerical examples, showing that solid structures are more earthquakeproof on pliable grounds

Card 1/2



NIKOLAYEV, Konstantin Ivanovich; GENEN, B.S., red.; SAGANOVA, V.V.,  
red. izd-va; KOSHLIYEV, G., tekhn. red.

[Some principles of construction in earthquake districts] Ne-  
kotorye polezhenia stroitel'stva v seismicheskikh raionakh.  
Ashkhabad, Izd-vo Akad. nauk Turkmenskoi SSR, 1959. 49 p.  
(MIRA 15:5)

(Earthquakes and building)



NIKOLAYEV, K.I.

Problems in estimating massive structures for the action of seismic forces. Trudy Inst. antiseism. stroi. AN Turk. SSR no.2:3-44 '58.  
(MIRA 17:6)

LITVINOV, V.M.; YERUKHIMOVICH, L.R.; NIKOLAYEV, K.I.

Bench for testing the parts of drilling pumps. Mash. 1 neft. obr.  
no.8:21-23 '64. (MIRA 17:11)

1. Gremenchkiy neftyanoy nauchno-issledovatel'skiy institut.

NIKOLAYEV, K.I.

Experimental investigations of the effect of short cylindrical reinforced-concrete shells on an evenly distributed load. Sber. trud. LIIZHT no.192:253-266 '62. (MIRA 16:9)

NIKOLAYEV, N.I.

Experimental investigation of prestressed reinforced concrete shells in the form of hyperbolic paraboloids. Sbor. trud. LIIZHT no.229:131-137 '64. (MIRA 18:8)

~~NIKOLAYEV, E.K. [deceased].~~ ~~UTKIN, A.V.,~~ YURCHENKO, I.F., inzh. red.; ~~CHEREMYSHEV,~~  
~~V.I., YUC;~~ BOBROVA, Ye.M. tekhn. red.

[Wages of workers employed on railroad cars] Oplata truda rabotnikov  
vagonnoi sluzhby; spravochnik. Pod obshchei red. I.F. Yurchenko,  
Moskva, Gos. transp. shel-dor. ind-vo, 1958. 123 p. (MIRA 11:9)  
(Wages)  
(Railroad)

NIKOLAYEV, K. H.

Chemical Abstr.  
Vol. 48 No. 4  
Feb. 25, 1954  
Inorganic Chemistry

Study of hydrates by the lyophilic method. K. V. Anshin, *Zh. Fiz. Khim.*, 28, 1712-1713 (1954). In the lyophilic method, water is dried by removing water from the hydrate with pyridine, treating the pyridine hydrate, thus formed, with  $\text{CaH}_2$  or other alk. earth hydrates, and measuring the vol. of  $\text{H}_2$  evolved. The method does not measure hydroxyl groups, only water bound as such.  $\text{Ca}(\text{OH})_2$ ,  $\text{Ca}(\text{OH})_2$ , and  $\text{Mg}(\text{OH})_2$  did not show any water by the lyophilic method.  $\text{Al}(\text{OH})_3$  and  $\text{Ga}(\text{OH})_3$  gave up 1 mole  $\text{H}_2\text{O}$  per mole hydrate; hence their structures are  $\text{HAl}(\text{OH})_2$  and  $\text{HGa}(\text{OH})_2$ .  $\text{Fe}(\text{OH})_3$  gave up 1 mole  $\text{H}_2\text{O}$  per 2 moles hydrate, to form  $\text{Al}_2\text{O}(\text{OH})_2$ .  $\text{Cr}(\text{OH})_3$  exists in the form  $\text{Cr}_2\text{O}_3 \cdot x\text{H}_2\text{O}$ , where  $x$  varies with the drying history of the material.  $\text{Cr}_2\text{O}_3 \cdot 4\text{H}_2\text{O}$  was the stable hydrate formed at  $100^\circ$ . More intense heating resulted in the formation of  $\text{Cr}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$ , and finally  $\text{Cr}_2\text{O}_3 \cdot \text{H}_2\text{O}$ , the latter at  $250^\circ$ . For Fe oxide no definite hydrate was found. With basic acid, dehydration below  $10^\circ$  gave 1 mole  $\text{H}_2\text{O}$  per mole acid, indicating the existence of  $\text{H}_2\text{O} \cdot \text{H}_2\text{O}$ . In the range  $10-50^\circ$ , dehydration resulted in the formation of  $\text{H}_2\text{O}$ . Perchloric acid hydrate gave up 2 moles  $\text{H}_2\text{O}$  per mole acid, indicating the structure  $\text{HClO}_4 \cdot 2\text{H}_2\text{O}$ . Chloral hydrate contains 1 mole  $\text{H}_2\text{O}$  per mole of chloral, which corresponds to the accepted structure  $\text{CCl}_3\text{CHO} \cdot \text{H}_2\text{O}$ ; the nature of the bond holding the  $\text{H}_2\text{O}$  was not ded. *Anal. J. Miller*

7-27-54

**AUTHORS:** Nikolayev, K. M., Dubinin, M. M. SOV/62-58-10-2/25

**TITLE:** The Adsorption Properties of the Carbon Adsorbents  
(Ob adsorbtsionnykh svoystvakh uglerodnykh adsorbentov)  
Information 3.- Investigation of the Adsorption Isothermal  
Lines of Gases and Vapours on Activated Charcoal Within a  
Wide Temperature Range Including the Critical Range  
(Sobshcheniye 3. Issledovaniye izoterm adsorbtsii gazov i  
parov na aktivnykh uglyakh v shirokom intervale temperatur,  
vklyuchayushchem kriticheskuyu oblast')

**PERIODICAL:** Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,  
1958, Nr 10, pp 1165-1174 (USSR)

**ABSTRACT:** As only some of the data worked out in this field contributed  
to the solution of the problem of the physical adsorption of  
substances in gas or vapor phase on adsorbents of diverse  
porous structure, the authors of this paper investigated the  
wide temperature range including the critical range with  
respect to the adsorption isothermal lines of nitrogen,  
krypton, xenon, tetrafluorethylene, and hexafluoropropylene on  
two types of activated charcoal that belong to the outer  
members of the series of activated charcoal of the first

Card 1/3

The Adsorption Properties of the Carbon Adsorbents. SCV/62-58-10-2/25  
Information 3.- Investigation of the Adsorption Isothermal Lines of Gases  
and Vapours on Activated Charcoal Within a Wide Temperature Range Including  
the Critical Range

structural type. As a result of the analysis of the experimental data and the investigation of the properties of the state of the adsorbed substances within the range of critical temperatures the authors proposed rational methods of determining the characteristic adsorption isothermal lines of substances in vapor or gas phase. In agreement with the potential theory of adsorption the coefficients of the affinity of the characteristic curves do not depend on the carbon structure; the volumes of the adsorption space have to be regarded as constant quantities for each activated charcoal if no ultra-porosity effect is present. Equations for the adsorption isothermal lines for the vapor and gas state of the substance to be adsorbed in the phase of equilibrium volumes were proposed for the activated charcoal of the first structural type; these equations correspond to one and the same equation of the characteristic curve. These equations of the adsorption isothermal lines are experimentally founded. There are 9 figures, 2 tables, and

Card 2/3



The Adsorption Properties of the Carbon Adsorbents. SOV/62-58-10-2/25  
Information 3.- Investigation of the Adsorption Isothermal Lines of Gases  
and Vapours on Activated Charcoal Within a Wide Temperature Range Including  
the Critical Range

23 references, 8 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR  
(Institute of Physical Chemistry of the Academy of Sciences,  
USSR)

SUBMITTED: May 17, 1957

Card 3/3

76-32-5-33/47

**AUTHORS:** Dubinin, M. M., Nikolayev, K. M., Sarakhov, A. I.

**TITLE:** Using the  $\alpha$ -Ionization Manometer in Sorption Investigations  
(Primeneniye  $\alpha$ -ionizatsionnogo manometra v sorbtzionnykh issledovaniyakh)

**PERIODICAL:** Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 5, pp.1155-1159  
(USSR)

**ABSTRACT:** In order to avoid the many disadvantages of mercury manometers in measurements of sorption investigations a variant of the  $\alpha$ -ionization manometer was developed under collaboration of the Radium Institute of the AS USSR; this manometer was produced and used in the present investigations. From the diagrams and the description can be seen that radium was used as radioactive source, which was laid in a thin layer on a plate-shaped base of gold, this production having been made by the RIAN of the USSR. The dimensions of the ionization chamber depended on the field of the pressure measurements, with two chambers present for a wide field of pressure ( $1.10^{-4}$  to 1000 torr), one for high and another for low

Card 1/2

76-32-5-33/47

Using the  $\alpha$ -Ionization Manometer in Sorption Investigations

pressures. A scheme of the amplifier plant which is an alteration of that described by Downing and Mellen (Ref 7) is also given. The described manometer has a measuring sensitivity of  $2.0 \cdot 10^{-11}$  A/ torr in the interval from  $1 \cdot 10^{-2}$  to 150 torr and is calibrated according to an Hg-manometer, with a measuring accuracy of a mean value of 1 - 2 % being achieved. The measurements carried out with nitrogen, krypton xenon and tetrafluorethylene on coal showed, compared with measurements by means of Hg-manometers, a good applicability of the  $\alpha$ -ionization manometer for investigations of adsorption phenomena. The described manometer is an experimental apparatus and still has to be further developed. Finally the authors thank Professor V. M. Vdovenko and D. M. Ziv, as well as Ya. Yu. Rib. There are 6 figures and 11 references, 8 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva  
(Moscow, Institute of Physics and Chemistry., AS USSR)

SUBMITTED: July, 17, 1957

Card 2/2

1. Manometers--Design 2. Alphaparticles--Ionization effects 3. Ionization chambers--Performance

WIKELAND, K. V.

"Investigation of hydrates by the hydride method." Astakhov, K. V., Ellisor, A. G., and Nikolayev, K. N. (p. 1754)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii), 1951, Vol 21, No 10.

NIKOLAYEV, K.H., insh.

Automatic production line for semidry molding of asbestos cement  
tiles. Stroi. i dor.mashinostr. 3 no. 7:23-26 J1 '58. (NIRA 11:8)  
(Tiles)

GALYSHEV, V.D.; NIKOLAYEV, K.N.

Experimental study of the effectiveness of measures under-  
taken in increasing the life of a crawler track. Trudy LPI  
no.228:145-151 '63. (MIRA 17:1)

NIKOLAYEV, K.M.; IGDEBERAYA, T...

Using polyacrylamide in the production of esterase-resistant products. *Soviet. mat.* 11 no.4:8-10 Apr '66. (MI 66 1816)

1. Nachal'nik otdela Vsesoyuznogo nauchno-issledovatel'skogo instituta po mashinam dlya promyshlennosti stroitel'nykh materialov (for Nikolayev).
2. Sukovattel' laboratorii Vsesoyuznogo nauchno-issledovatel'skogo instituta po mashinam dlya promyshlennosti stroitel'nykh materialov (for Poparskaya).

NIKOLAYEV, K.P., gornyy inzh.; KUDRYAVTSEV, M.V., gornyy inzh.; KIKOVKA,  
Ye.I., gornyy inzh.

Simultaneous permanent and cross trenching. Cor. shur. no.2:  
21-24 F'62. (MIRA 17:2)

1. Novo-Krivorozhskiy gorno-obogatitel'nyy kombinat.



APSENT'YEV, A.I., detent, kand. tekhn. nauk; ZHURAVKO, B.K., gornyy  
inzh.; KIKOVKA, Ye. I., gornyy inzh.; MCHYUTA, P. I., gornyy inzh.;  
NIKOLAYEV, K. P., gornyy inzh.

Speeding up stripping and development of the  $\pm 15m$  level of  
the strip mine at the Southern Mining and Ore Dressing Combine.  
Sbor. nauch. trud. MGRI no. 16:17-82 '63. (MIRA 17:8)

~~NIKOLAEV, Nikolai~~ KLUSHIN, M.I., kand. tekhn. nauk, red.; DOMOFYEV, V.A.,  
tekhn. red.

[High-speed cutting on automatic machines] Shirokoe resanie na  
avtomatakh. Moskva, Gosmorgizdat, 1951. 125 p. (MIRA 11:9)  
(Metal cutting)

NIKOLAYEV, K.Ye.

Cutting-off tools designed for rapid automatic machining. Stan. 1  
instr. 26 no.8:15-17 Ag'55. (NIRA 8:12)

(Cutting tools)

AUTHOR: Nikolayev, K.Ye. and Lukin, M.R.

94-3-5/26

TITLE: An Apparatus for "Burning-out" High-voltage Power Cables  
(Apparat dlya prozhiga kabeley vysokogo napryazheniya)

PERIODICAL: Promyshlennaya Energetika, 1958, Vol.13, No.3,  
pp. 10 - 11 (USSR).

ABSTRACT: This device is used in fault location to develop a partial fault by applying a steadily rising d.c. voltage to a cable until metallic short-circuit occurs between the cable core and sheath. In the half-wave rectifier form, the apparatus can be used to test 3 - 6 kv cables at high voltage; a micro-ammeter measures the leakage current. The circuit of the equipment, given in Fig.1, includes a power transformer, voltage regulator, valve filament transformer, rectifying valves and measuring equipment. The high-voltage winding of the transformer is illustrated diagrammatically in Fig.2 and the construction is described. The half-wave rectifier circuit shown in Fig.1 has two paralleled valves, type KPM-110, in series with a limiting resistance of 30 to 40  $\Omega$  and gives up to 40 kv. With the full-wave rectifier circuit of Fig.3, the apparatus can give 3.5 A at 15 kv. These values are always sufficient for cables of 3 - 10 kv. There are 3 figures.

Card1/1

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86770  
S/094/60/000/005/002/003  
E073/E535

### Mobile Apparatus for Cable Testing

of the cable armour provide a leakage circuit through the insulation of the cable being tested. Before starting the tests, the lever of the switch is turned into the position "heating" (contact 1-1 closed, contacts 2-2 and 3-3 open) and the regulator head is turned anticlockwise up to the stop position (corresponding to the extreme left position in the diagram). On turning the head clockwise, the filament voltage increases. The filament is heated for 1 min. By turning the head into the "working" position, the head is disconnected from the filament circuit and connected to the primary circuit of the step-up transformer (without breaking the filament circuit: contacts 1-1 open, contacts 2-2 and 3-3 closed). By turning the head anticlockwise, the voltage in the test cable is increased. The sketch, Fig.3, shows the layout of the components of the test apparatus. The step-up transformer 1 is placed into a bakelite cylinder 2 which, together with its lid, is embedded into paraffin, heating at 150 to 170°C. During this operation, humidity is eliminated from the transformer winding and from the bakelite. The magnetic core is of the rod type and made up of 30 x 30 x 0.5 mm sheets. The high voltage winding is sub-divided into sections of

Card 2/5

85773

S/094/60/000/005/002/003  
E073/2535**Mobile Apparatus for Cable Testing**

30 000 turns each (0.18 mm enamelled wire) with an interlayer insulation consisting of impregnated fabric. The low voltage windings have 525 turns of 1 mm diameter enamelled wire. The main insulation of the core is formed by a double bakelite cylinder. The two-stage filament transformer has the transformer ratios 250/12 and 12/12 V. The 250/12 V transformer is a dry one and has a rod core of 8 cm<sup>2</sup> cross-section. The primary windings consist of 1000 turns of enamel wire of 0.25mm, the secondary windings consist of 50 turns of 1.5 mm enamel wire. The second transformer is a voltage dividing transformer and is designed to withstand the full kenotron voltage, i.e. 50 kV. Here again the insulation consists of a paraffin and bakelite tube; the core is cylindrical, has a cross-section of 7.5 cm<sup>2</sup> and is made of 0.5 mm thick sheets. The step-up transformer, the filament transformer and the kenotron are inside a bakelite cylinder with a wall thickness of 5 mm. A bushing passes through this cylinder to which the cable under test is connected. The filament current and the high voltage are regulated by an autotransformer with tap-changing

Card 3/5

86770  
S/094/60/000/005/002/003  
E073/E535

### Mobile Apparatus for Cable Testing

gear housed in a separate bakelite housing. The test instrument can be operated with supply voltages of 127-220 V. Terminals are provided for grounding, for connecting the electrostatic voltmeter and for connecting the regulator with the other parts of the instrument. There are 3 figures.

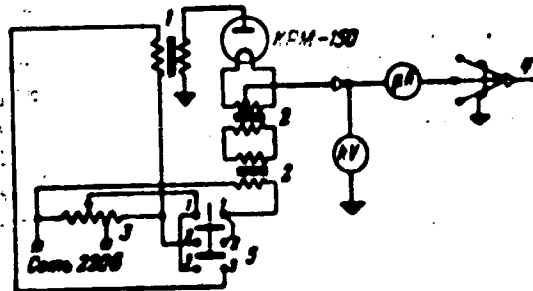


Рис. 2. Схема переносного аппарата для испытания кабелей.

1 — вспомогательный трансформатор 220/0/0 В; 2 — двухобмоточный трансформатор навала с коэффициентом трансформации 250/12 и 12/12; 3 — регулятор ЛАТР-2; 4 — осциллографный кабель; 5 — автоматический переключатель.

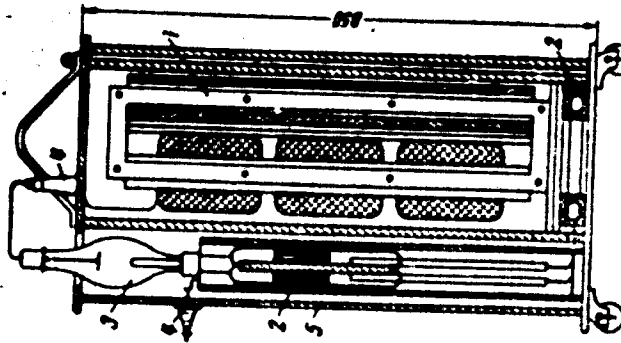
Card 4/5

44

86770

S/094/60/000/005/002/003  
E073/E535

Mobile Apparatus for Cable Testing  
Fig. 3



Обмотка  
Батарея

Рис. 3. Размещение элементов портативной  
установки.  
1 — портативный трансформатор; 2 — диуриксидный трансформатор  
малой мощности; 3 — портативная лампа; 4 — проводные элементы;  
5 — диалитовый элемент.

Card 5/5

44



NIKOLAYEV, K.Ye.

Water-cooling flexible cables of an electric-arc furnace. Iron.  
energ. 16 no.12:14-16 D '61. (MIRA 14:12)  
(Electric furnaces--Cooling)

NIKOLAYEV, L., inzh.; OLEJNIK, G.; DRUST, V.; MINISHEV, P., inzh.; LUKASHEVSKIY,  
L., inzh.

Adopted at the Exhibition of the Achievements of the National  
Economy and introduced into industrial production. Inform.biul.  
VDNKH no.11:11-12 N '64. (MIRA 18:2)

1. Tsentral'noye byuro tekhnicheskoy informatsii Privolzhskogo  
soveta narodnogo khozyaystva (for Olejnik). 2. Latvyskiy  
institut nauchno-tekhnicheskoy informatsii (for Drust).

**NIKOLAYEV, L., insth.**

**Improvement for the frame for hanging sausages. Mas. ind. SSSR 29  
no. 3:49 '58. (MIRA 11:6)**

**1. Leningradskiy tekhnologicheskij institut kholodil'noj promyshlen-  
nosti.**

**(Sausages) (Packing houses—Equipment and supplies)**

NIKOLAYEV, L., inst.

Prolonging the life of frames for hanging sausages. Mas. ind.  
SOSE 29 no.6:49 '58. (NIRA 11:12)

1. Leningradskiy tekhnologicheskii institut kholodil'noy promyshlennosti.  
(Packing houses--Equipment and supplies)

LAPSHIN, A.; ROUSHKOV, T.; NIKOLAYEV, L.

Study of heat exchange in thinlayer tubular heat exchangers  
with rotary turbulent flow displacement baffles. *Mias. ind.*  
SSSR 30 no.3:22-24 '59. (NIRA 12:9)

Leningradskiy tekhnologicheskii institut kholodil'noy  
promyshlennosti.

(Oils and fats, Mible)

(Heat--Transmission)

NIKOLAYEV, L.

Device for controlling the stroke of an apportioning piston  
in automatic outlet cutters. Mas. ind. SSSR 32 no.1:46-47  
'61. (MIRA 14:7)

1. Leningradskiy tekhnologicheskii institut kholodil'noy  
promyshlennosti.  
(Meat industry--Equipment and supplies)

NIKOLAYEV, L.

Testing the Titan fat cooler. Mas.izd.SSSR 32 no.2:12-13 '61.  
(MIRA 14:7)

1. Leningradskiy institut kholodil'noy promyshlennosti.  
(Oils and fats)  
(Refrigeration and refrigerating machinery--Testing)

ARSENT'YEV, A. I., kand. tekhn. nauk; NIKOLAYEV, L. A., goruyy inzh.;  
FERDYUKOV, R. S., goruyy inzh.

Digging a wide trench in an open pit. Ger. shur. no.11:75  
N 42. (MIRA 19:10)

1. Kriverskiy gosudarstvennyy institut (for Arsent'yev).
2. Olenegorskiy gosudarstvennyy kombinat (for Nikolayev, Ferdyukov).

(Strip mining)



NIKOLAYEV, L. A.

"Les Composés Complexes et les Modèles des Ferments," a paper  
presented at the International Symposium on the Origin of Life, Moscow, 19-24  
Aug 1957.

**СИБИРСКИЙ, Л.А., кандидат технических наук, ГОУХАРЕНКО, А.Д.**

**Pneumatic starting devices used in ZIL-151 automobiles. Avt.i trakt.  
prom. no.4:14-16 Ap '57. (MLRA 10:5)  
(Automobiles--Starting devices)**

SOV-113-58-10-10/16

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ABSTRACT: Semiconductor resistance thermometers are suitable for measuring temperatures of combustion engines during tests, since they have an accuracy of  $\pm 0.5^{\circ}\text{C}$ . The author briefly describes two semiconductor temperature measuring devices. Figure 1 shows a temperature measuring device for temperatures ranging from  $-40$  to  $+125^{\circ}\text{C}$ . It can be used for subsequent temperature measurements at 10 different positions. There are 10 temperature transducers consisting of the thermometer "MMT-4" of which the basic part is the semiconductor thermoresistor "MMT-1". Figure 2 is a cross section of the transducer, while Figure 3 shows the circuit arrangement. A microammeter and an unbalanced bridge "NM-31" are used as measuring instruments. Figure 4 shows a surface temperature measuring device with a range from 0 to  $300^{\circ}\text{C}$ . It consists also of the measuring bridge "NM-31" and a microammeter but has

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only one rod-shaped transducer. It is possible to measure with this device, within 3 - 4 minutes, the temperatures at 30 - 40 different spots. The transducer contains a semiconductor micro-thermoresistor "MT-54". The disadvantage of semiconductor temperature transducers is their low mechanical strength which leads to failure of the elements when subjected to higher vibrational loads. Therefore it is better to utilize thermocouples for measuring the temperature of parts subjected to impact stresses or vibrational loads. Figure 6 shows the circuit arrangement of such a measuring device with automatic compensation. The device may be used for measuring temperatures in the range from  $-50$  to  $+150^{\circ}$  C. Semiconductor thermoresistors "MMT-4" are used as compensators. The device receives power from a "KBS-0.5" battery. There are 2 photos and 4 diagrams.

1. Internal combustion engines---Temperature factors
2. Temperature ---Measurement
3. Resistance thermometers--Performance
4. Semiconductors---Applications

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