

BAZHENOVA, L. A.

137-58-5-8834

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 14 (USSR)

AUTHOR: Bazhenova, L. A.

TITLE: A Direct-flow Continuous Furnace (Pryamotochnaya metodi-
cheskaya pech')

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 11-12, pp 59-60

ABSTRACT: The re-design of a heating furnace operating in conjunction with a 1500-ton press included the conversion to direct-flow operation. This type of operation is characterized by the fact that the combustion products and the metal being heated move along mutually parallel paths. As a result of the conversion, high uniformity of heating was achieved throughout the cross section of the ingot together with improved wear resistance of the lining and of the hearth. In order to reduce consumption of fuel oil it is recommended that a recuperator unit be installed; to prevent the cooling of ingots during forced stoppages of the press it is essential that an additional burner (63.5 mm) be installed on the side.

1. Furnaces--Design 2. Furnaces--Operation

Ye. L.

Card 1/1

BAZHENOVA, L.A.

137-58-5-10862

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 281 (USSR)

AUTHOR: Bazhenova, L.A.

TITLE: Variation in the Mechanical Properties of Brass Wire With Diameter (Izmeneniye mekhanicheskikh svoystv latunnoy provoloki v zavisimosti ot yeye diametra)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 15, pp 28-29

ABSTRACT: L-68 brass wire of 0.1 to 5 mm diam is investigated. It is established that, all other conditions being equal, reduction in diameter is accompanied by: a) an increase in intensity of hardening on cold work, a rise in σ_b , and a drop in δ ; b) a considerable reduction in the temperature interval for heat treatment in which optimum mechanical properties are ensured. There is a simultaneous drop in δ and rise in σ_b ; c) the grain growth rate diminishes on recrystallization. In the case of 5-mm diam wire and 700° C anneal for 3 hours, the grain increases to 350 microns in size, while in 0.5-mm wire, in the same conditions, grain size is only 130 microns. The data obtained make possible a rational planning of process procedures in wire treatment. 1. Brass wire--Mechanical properties

Card 1/1

P.N.

USSR / Plant Diseases. Diseases of Forest Species.

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Abs Jour : Ref Zhur - Biologiya, No 22, 1958, No. 100550

Author : Vanin, S. I.; Bazhenova, L. A.; Zhuravlev, I. I.;
Sokolov, D. V.

Inst : Leningrad Forest Technology Academy

Title : Phytopathological Condition of Larch Plantings in
Lindulovskaya Grove and Technical Properties of Their
Wood

Orig Pub : Tr. Leningr. lesotekhn. akad., 1957, vyp 82, ch. 1,
105-116

Abstract : A phytopathological survey in 1949 of Lindulovskaya grove,
laid in 1738-1805 in Roshchinskiy forest range in
Leningradskaya oblast', showed a severe infection of
larch tree stands with root rots. 33% of trees were
affected with the root-rot fungus (*Fomes annosus*), 26% -
with Schweinitz pore fungus (*Polyporus schweinitzii*) and

Card 1/3

USSR / Plant Diseases. Diseases of Forest Species.

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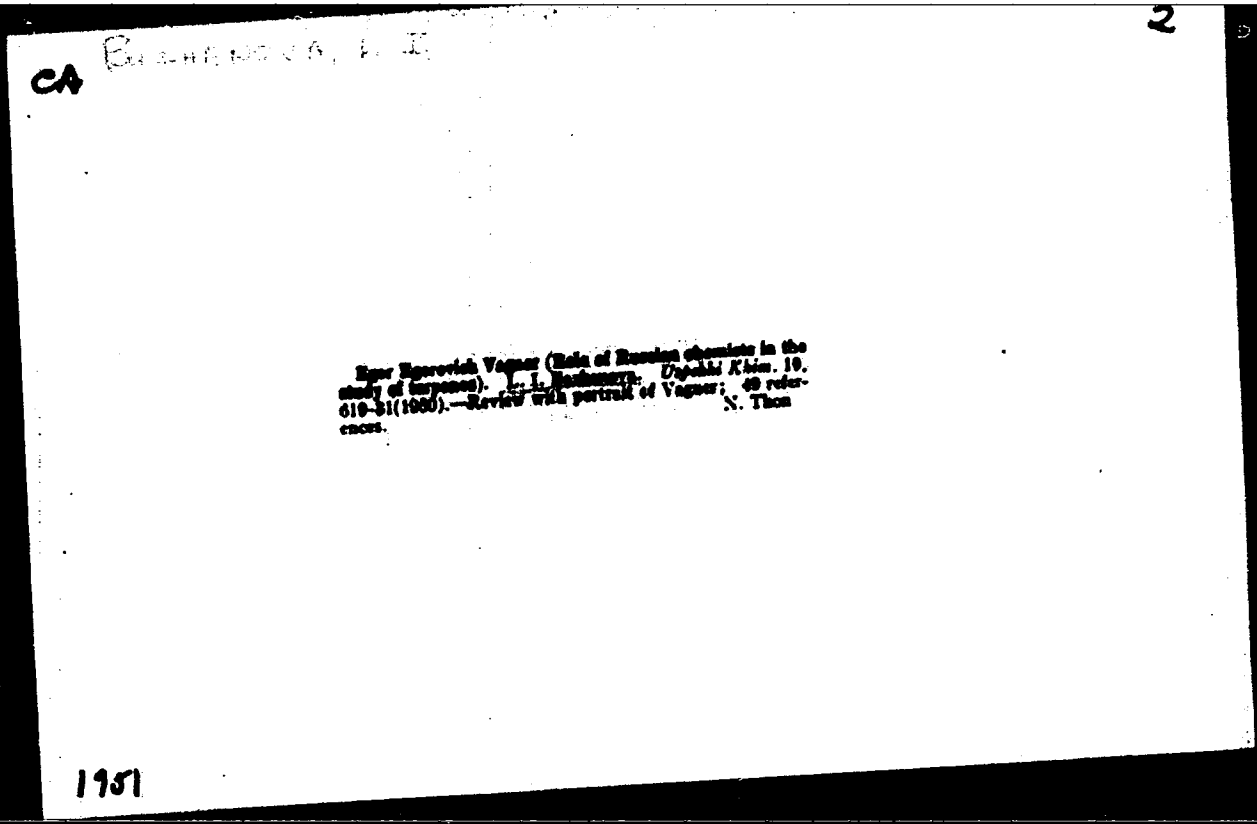
Abs Jour : Ref Zhur - Biologiya, No 22, 1958, No. 100550

examined to bring about the recovery of larch tree stands
in Lindulovskiy wood. -- T. S. Maksimova

Card 3/3

LAYNER, D.I.; BAZHENOVA, L.A.; AGAFONOVA, A.V., Primalni uchastiye:
PAKHOMOVA, Ye.F., inzh.; KORSUNSKAYA, K.N., inzh.

Effect of various additions on the modification and recrystallization
temperature of zinc. Trudy Giprotsvetmetobrabotka no.20:81-96
'61. (MIRA 15:2)
(Zinc—Metallurgy) (Crystallization)



ISAYEVA, L.A., dotsent; BAZHENOVA, L.K.

Cardiovascular changes in systemic lupus erythematosus in children.
Pediatriia 41 no.5:21-26 My '62. (MIRA 15:5)

1. Iz kafedry detskikh bolezney (rukovoditel' - deystvitel'nyy
chlen AMN SSSR prof. Yu.F. Dombrovskaya) I Moskovskogo ordena
Lenina meditsinskogo instituta imeni I.M. Sechenova.
(LUPUS ERYTHEMATOSUS) (CARDIOVASCULAR SYSTEM--DISEASES)

FL'TERMAN, L.I.; STEPUKHOVICH, A.D.; BAZHENOVA, I.K.

Kinetics and the mechanism of the initiated decomposition of a propane-butane mixture at low pressures. Neftkimiia 4 no.5:767-771 S-0 '64.

(MIRA 18:1)

1. Saratovskiy gosudarstvennyy universitet imeni N.G.Chernyshevskogo.

BAZHENOVA, L. M.

Dissertation: "Investigation in a Series of Acylamino-Anthraquinone Dyestuffs." Cand Chem Sci, Khar'kov State U, Khar'kov, 1954. (Referativnyy Zhurnal--Khimiya, Moscow, No 12, Jun 54)

SO: SUM 318, 23 Dec 1954

BUGAY, P.M.; GOL'BERKOVA, A.S.; BAZHENOVA, L.M.

Effect of solvents on the absorption spectra of some amino-
and quione derivatives of diphenylamine. Zhur.fiz.khim. 35
no.8:1731-1737 Ag '61. (MIRA 14:8)

1. Khar'kovskiy politekhnicheskij institut imeni V.I. Lenina.
(Diphenylamine--Spectra)

BUGAY, P. M.; KONEI'SKAYA, V. N.; GOL'BERKOVA, A. S.; BAZHENOVA, L. M.; and NAYDENOVA, I. I.

"Issledovaniye metodom elektronnykh spektrov kinetiki oksleniya orto oksi-i metoksi-proizvodnykh difenil-amina v 90% H₂SO₄ vo vremeni i ustanovleniye prirody polos pogloshcheniya."

report submitted for the VIIth European Congress on Molecular Spectroscopy, Budapest, 22-27 Jul 1963.

S/076/63/037/002/011/018
B101/B186

AUTHORS: Bugay, P. M., ~~Bazhenova, L. M.~~, Gol'berkova, A. S.,
Konel'skaya, V. N., Naydenova, I. I. (Khar'kov)

TITLE: Electron spectra and nature of the absorption bands of
aromatic amine derivatives. II. Electron spectra of
diphenyl amine and its hydroxy and methoxy derivatives

PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 2, 1963, 378-386

TEXT: Based on the classification of absorption bands of diphenyl amine
derivatives published in Zh. fiz. khimii, 36, 1562, 1962, the bands of
the following compounds are discussed in detail: $C_6H_5NHC_6H_4X$, where X = H,
o-, m-, or p-OH; o-, m- or p- CH_3O , and $XC_6H_4NHC_6H_4Y$, where X = Y = o-,
m-, or p-OH; X = o-, m-, or p-OH, Y = o-, m-, or p- CH_3O ; X = Y = o-, m-
or p- CH_3O . The solutions used were: hexane, ethanol, 98% H_2SO_4 , glacial
acetic acid, or ethanol + 2 M sodium alcoholate. The data for λ , $\log \epsilon$,
oscillator strength, electron transfer energy and band width are tabled.
Card 1/3

Electron spectra and nature ...

S/076/63/037/002/011/018
B101/B186

In all substances, the fundamental band was the $A_{1g} \rightarrow B_{2u}$ benzene band which has high absorption and oscillator strength and appears between $\lambda = 254$ and $\lambda = 300$ $m\mu$. Besides this, the A band ($\lambda = 283-417$ $m\mu$) and the short-wave aniline band B ($\lambda = 220-248$ $m\mu$) were observed, but not in all solvents. The long-wave D band ($\lambda = 335-890$ $m\mu$) is observed in almost all dihydroxy, hydroxy-methoxy and dimethoxy derivatives of diphenyl amine. In the presence of two or three functional groups with equal electron-directing properties (OH, OCH₃, NH) one of the groups, when subjected to the effect of NH as a stronger electron donor acquires, the properties of a weak electron acceptor; this causes the appearance of the A band characteristic of functional groups with opposite sign. Also the dipole moment increases which was 1.95 D for p-hydroxy diphenyl amine, 1.79 D for 4-methoxy diphenyl amine, and 3.5 D for 4,4'-dihydroxy diphenyl amine. On formation of salts, the B band disappears or becomes weaker, when the salt formation is incomplete. In such cases, the oscillator strength decreases and a hypsochromic shift of the $A_{1g} \rightarrow B_{2u}$ band is observed. There are 2 tables.

Card 2/3

Electron spectra and nature ...

S/076/63/037/002/011/018
B101/B186

ASSOCIATION: Khar'kovskiy politekhnicheskij institut im. V. I. Lenina
(Khar'kov Polytechnic Institute imeni V. I. Lenin)

SUBMITTED: November 22, 1961

Card 3/3

S/076/63/037/003/012/020
B101/B215

AUTHORS: Bugay, P. M., Konel'skaya, V. N., Bazhenova, L. M.,
Gol'berkova, A. S., Naydenova, I. I.

TITLE: Effect of the type of aromatic amines (primary, secondary,
tertiary) and their o-derivatives, m-derivatives, and p-
derivatives on the absorption spectra

PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 3, 1963, 652-655

TEXT: This is a comparison of the widths and intensities of the 288 m μ benzene absorption bands in the spectra of aniline, diphenyl amine (DPA), triphenyl amine, o-aminophenol, 2-hydroxy-DPA, 2,2'-dihydroxy-DPA, 2-hydroxy-2'-methoxy-DPA, m-aminophenol, 3-hydroxy-DPA, 3,3'-dihydroxy-DPA, 3-hydroxy-3'-methoxy-DPA, p-aminophenol, 4-hydroxy-DPA, 4,4'-hydroxy-DPA, and 4-hydroxy-4'-methoxy-DPA dissolved in ethanol, hexane, 98% H₂SO₄, 100% CH₃COOH, and ethanol + 2 M alcoholate. Results: (1) The amino group is conjugated with all benzene rings, although to different degrees in the different compounds. The greatest increase in intensity of the band
Card 1/2

Effect of the type of aromatic ...

S/076/63/037/003/012/020
B101/B215

occurs on transition from aniline to DPA. (2) The chemical activity of the compound and salt formation in H_2SO_4 and CH_3COOH can be determined from the band intensity. (3) Increase in intensity of maximum absorption on transition from aminophenol to monohydroxy-DPA and decrease in intensity on transition to dihydroxy-DPA confirm that the amino group of DPA is conjugated with both benzene rings and that the conjugation is affected by the functional groups in o, m, or p positions. (4) In the ortho-hydroxy derivatives of aniline and DPA there exists an intramolecular hydrogen bond. (5) The band intensity decreases on salt formation. (6) Intensive changes showing no regular relation to the band intensity occur during the formation of quinoidal compounds and oxidation. There are 3 tables.

ASSOCIATION: Khar'kovskiy politekhnicheskiy institut im. V. I. Lenina
(Khar'kov Polytechnic Institute imeni V. I. Lenin)

SUBMITTED: March 19, 1962

Card 2/2

BUGAY, P.M.; KONEL'SKAYA, V.N.; GOL'BERKOVA, A.S.; BAZHENOVA, L.M.

Electronic spectra and the nature of absorption bands of aromatic
amine derivatives. Part 3. Zhur.fiz.khim. 36 no.10:2233-2235
0 '62. (MIRA 17:4)

1. Khar'kovskiy politekhnicheskiy institut imeni Lenina.

BAZHENOVA, L. N.

BAZHENOVA, L. N.: "Rock-forming minerals of the granitic pegmatites of the western Azov Sea region". Kiev-L'vov, 1955. Min Higher Education Ukrainian SSR. Kiev Order of Lenin Polytechnic Inst. L'vov State U imeni Ivan Franko. (Dissertations for the degree of Candidate of Geological-Mineralogical Sciences.)

SO: Knizhnaya Letopis' No. 50 10 December 1955. Moscow

~~BAZHENOVA, L. N.~~

Microcline in pegmatites from the western Azov region. Min. ser. no. 9:
145-155 '55. (MLRA 9:9)

1. Kiev, Politeknicheskii institut.
(Azov region--Microcline) (Azov region--Pegmatites)

BAZHENOVA, L.N.

Gahnite from pegmatites of the western Azov region. Min.sbor.
no.9:330-334 '55. (MIRA 9:9)

1.Kiyev. Politeknicheskij institut.
(Azov region--Gahnite)

GAVRUSEVICH, B.A.; BAZHENOVA, L.N.; AGAFONOVA, T.N.

Finds of phenacites in Volhynian pegmatites. Min.sbor. no.11:
346-347 '57. (MIRA 13:2)

1. Gosuniversitet imeni T.G.Shevchenko i Politekhnicheskiy
institut, Kiyev.
(Volhynia--Phenacite) (Volhynia--Pegmatites)

BAZHENOVA, L.N. [Bazhenova, L.M.]; SAMSONOVA, T.M.

Study of pyrophyllite schists of the Kuryanov deposits of Zhitomir province for their complex utilization. Dep. AN URSR no.7:946-949 '64. (MIRA 17:9)

1. Kiyevskiy politekhnich'eskiy institut. Predstavleno akademikom AN UkrSSR B.S.Lysinym.

BAZHENOVA, L.N.

Seminar on the crystal chemistry of elements and compounds.
Porosh.met. 4 no.5:104-105 S-0 '64.

(MIRA 18:10)

L 46248-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6023913

SOURCE CODE: UR/0363/66/002/007/1194/1199

AUTHOR: Samsonov, G. V.; Bazhenova, L. N.; Ivan'ko, A. A.

55

B

ORG: Institute of Materials Science Problems, Academy of Sciences, UkrSSR (Institut problem materialovedeniya Akademii nauk UkrSSR)TITLE: On the correlation of certain physical properties of type $A^{III}B^V$ and $A^{II}B^VI$ semiconductors

SOURCE: AN SSSR. Izv. Neorg materialy, v. 2, no. 7, 1966, 1194-1199

TOPIC TAGS: forbidden zone width, semiconductor crystal, electron structure

ABSTRACT: A correlation observed earlier between the forbidden gap width and the hardness of semiconductor compounds of types $A^{III}B^V$ and $A^{II}B^VI$ and also their melting points was confirmed. It is shown that when these compounds are formed, a redistribution of electrons among the components takes place with the formation of energetically stable sp^3 and s^2p^6 configurations; the prevalence of sp^3 configurations leads to the formation of a sphalerite-type structure, and the prevalence of s^2p^6 , to a wurtzite-type structure. This is reflected to some extent in the physical properties of the semiconductors, owing to the great energetic stability of the s^2p^6 configurations as compared to sp^3 . As the principal quantum number of sp electrons increases, the energetic stability of the corresponding configurations declines; there is a corresponding increase in the fraction of collective and weakly bonded electrons, causing a decrease

Card 1/2

UDC: 537.311.33

L 46248-66

ACC NR: AP6023913

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in the forbidden gap width, melting point, and hardness. The high degree of localization of valence electrons in stable configurations causes the disproportionation of the corresponding compounds during evaporation. When the energetic stability of the stable electron configurations decreases, the evaporation takes place without disproportionation. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 12Jul65/ ORIG REF: 018/ OTH REF: 015

Card 2/2 blg

L 08313-67 EWT(m) GG
ACC NR: AP6032303 SOURCE CODE: UR/0226/66/000/009/0110/0111

AUTHOR: Bazhenova, L. N.

ORG: none

TITLE: The second conference on crystal chemistry of elements and compounds

SOURCE: Poroshkovaya metallurgiya, no. 9, 1966, 110-111

TOPIC TAGS: chemical conference, chemical personnel, crystal chemistry, chemical valence, electron shell, lanthanide series, solubility, rare earth metal, boride, silicide, gallium, indium, thallium, neutron irradiation

ABSTRACT: The second conference on the crystal chemistry of elements and compounds, sponsored by the Powder Metallurgy and Rare Metals Department of the Kiev Polytechnic Institute (KPI) and the Refractory Compound Department of the Institute of Powder Metallurgy (IPM), Academy of Sciences UkrSSR was held, 29-30 June 1966 at the Kiev Polytechnic Institute. Representatives of scientific institutions and the teaching staff of various Universities and Institutes from Leningrad, Kiev, L'vov, Perm', Kherson, and Zhdanov presented and discussed 16 reports. Professor G. V. Samsonov, Corresponding Member AN UkrSSR

Card 1/2

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49
B

L 08313-67

ACC NR: AP6032303

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presented the paper "Solid body model under assumption of distribution of valency electrons into localized and non-localized." V. Ya. Shlyuko (KPI) showed that the thermoemissive properties of hexaborides MeB_6 changed with a change in the electron number in the f-shell of isolated lanthanide atoms. V. P. Bondarenko (KPI) investigated the solubility of rare-metal hexaborides in the LaB_6-MeB_6 system, where Me is Y, Ce, Nd, Pb, Sm, Gd, and the effect of various factors on the formation of continuous solid solutions. Yu. B. Paderno and B. M. Rud' (IPM) made an attempt to explain the formation of the structure of rare-metal disilicides from the viewpoint of the electron structure of isolated atoms. L. N. Bazhenova (KPI) analyzed the electron nature of crystal-chemical properties of gallium, indium, and thallium and some of their compounds, including semiconductors. M. S. Koval'chenko, V. V. Ogorodnikov, and A. G. Kravnyy (IPM) studied the effect of neutron irradiation (10^{18} and 10^{20} n/cm² integral flux) on lanthanum hexaboride. M. S. Koval'chenko, V. V. Ogorodnikov, and L. F. Ochkaev investigated the effect of neutron irradiation (10^{16} , 10^{18} or 10^{20} n/cm² integral flux) on the lattice parameters of titanium carbide and determined the amount of energy accumulated in titanium carbide as statistical lattice distortion.

SUB CODE: 07, 20/ SUBM DATE: none

Card 2/2 nst

ACC NR: AP6036790

(N)

SOURCE CODE: UR/0363/66/002/011/1991/1997

AUTHOR: Bazhenova, L. N.; Ivan'ko, A. A.; Samsonov, G. V.; Slyshankova, V. A.

ORG: Kiev Polytechnic Institute (Kiyevskiy politekhnicheskiy institut)

TITLE: Microhardness of some oxides

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 11, 1966, 1991-1997

TOPIC TAGS: oxide microhardness, aluminum oxide, beryllium oxide, magnesium oxide, calcium oxide, titanium oxide, zirconium dioxide, hafnium dioxide, niobium pentoxide, chromic oxide, *HARDNESS, STRESS CONCENTRATION*

ABSTRACT: The microhardness of a series of oxides has been tested with various indenter loads (30—200 g) applied for various lengths of time. It was found that the microhardness of oxides decreases with increased load and increased test duration. The average microhardness (kg/mm²) was as follows: Al₂O₃—2540; MgO—1015; CaO—615; TiO₂—1085; ZrO₂—1230; HfO₂—925; Nb₂O₅—740; Cr₂O₃—2970. It is believed that the hardness of the oxides depends on the probability of metal and oxygen atoms forming stable electron configurations. As the number of stable configurations formed by one or both of the components drops, the number of free electrons increases and the hardness also drops. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 11/ SUBM DATE: 21Jul65/ ORIG REF: 007/ OTH REF: 001/
Card 1/1 UDC: 541.45:539.53

BAZILENOVA, L.T. (Moskva)

Review of F.I.Karamyshev's book "Disability following myocardial
infarct; on the basis of observations in industry." Klin.med.
37 no.7:149-153 J1 '59. (MIRA 12:10)
(HEARTH--INFARCTION) (DISABILITY EVALUATION)
(KARAMYSHEV, F.I.)

BAZHENOVA, M.

Overall mechanization of finishing operations. Na stroi. Ros.
3 no.1:11 Ja '62. (MIRA 16:5)

1. Brigadir otdelochnikov stroitel'nogo tresta No.6, g. Omska.
(Painting, Industrial--Equipment and supplies).
(Plastering--Equipment and supplies)

BAZHENOVA, N. A.

see ~~also~~

CHAPURSKAYA-BAZHENOVA, N. A.

BABAYEV, V.I., inzh.; GRANOVSKAYA, R.M., inzh.; BAZHENOVA, N.I., inzh.; DAN'SHINA, N.M., inzh.

Using the industrial method for the sulfonation of alcohols from unsaponifiables II with sulfuric acid. Masl.-zhir.prom. 28 no.8:34-35
Ag '62. (MIRA 17:2)

1. Shebekinskiy kombinat sinteticheskikh zhirnykh kislot i zhirnykh spirtov.

BABAYEV, V.I., inzh.; BAZHENOVA, N.I., inzh.; ZAVISTOVSKAYA, M.D.

Sulfatization of aliphatic alcohols from unsaponifiable^{II}
by chlorosulfonic acid. Masl.-zhir.prom. 28 no.7:23-24
Jl '62. (MIRA 15:11)

1. Shebekinskiy kombinat sinteticheskikh zhirnykh
kislot i zhurnykh spirtov.
(Alcohols) (Sulfonation)
(Unsaponifiable matter)

1. BAZHENOVA, N. M.

2. USSR (600)

4. Wheat

7. Breeding soft spring wheat for resistance to smut. Sel. i sem. 20, No. 5, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953. Unclassified.

CATEGORY : 5032
Cultivated Plants. Grains. Leguminous Grains.
Tropical Cereals.
ORIG. JOUR : Ned. Star - biologiya, No. 5, 1957, no. 20240
AUTHOR : Mazhanova, N.N.
INST. : Sci. Res. Inst. of Agric. of the North Eastern *
TITLE : Study of Corn Varieties

ORIG. PUB.: Byul. nauchno-tekhn. inform. N.-i. in-ta s.kh. sev-voost. r-nov nechernozemn. polosy, 1957, No. 2-3, 11-16
ABSTRACT : The latest ripening varieties: Liming, Odes- sa 10, Sterling, Krasnodarskaya 1/49, Krasnodarskaya 10/53, VIR-42, the cross between Kishinevskiy 3 and Osetinskaya belaya dent in which 75% of the plants produced staminate flowers on the 80th to 85th day after planting, the appearance of these fibers from the cobs was noted in individual plants on the 90th to 94th day after planting. In the most rapid ripening varieties: Chishainskaya 1, Belo-

* Districts of the Non-Chernozem Zone

COND:

1/3

DI. No. 1 :
DIT. No. : Cultivated Plants.
ABR. SOUR.: Ref Zhur -Biologiya, No. 1, 1959, No. 20240

Author :
Inst. :
Title :

ORIG. PUB.:

ABSTRACT : yaroye psheno and Slavgorodskaya 270, the period from planting to large-scale panicle formation of male inflorescence varies from 52 to 56 days; the appearance of corn silk in 59-61 days after sowing. The remaining varieties studied took an intermediate position between the late maturing and rapid ripening varieties. In Kirovskaya Oblast corn can be cultivated only for roughage. The highest yield boosts were produced by

CARD : 2/3

41

SYNOPSIS : Cultivated plants.

ABST. JOUR : Vestnik Biologiya, No. 2, 1959, No. 2246

AUTHOR :

INST. :

TITLE :

ORIG. PUB.:

ABSTRACT : the varieties: Liming, Odessa 10, C12, North Dakota, Sterling, VIR-110, Kishinevskaya belaya, Voronezhskaya 76 and Krasnodarskaya 1/49, which brought in 100 centners per hectare and more in addition.--O.Gorbunova

CARD: 3/3

BAZHENOVA, H.M., kand.sel'skokhozyaystvennykh nauk

Severo-vostochnaia, a new valuable variety of soft spring wheat.
Agrobiologiya no.4:514-516 J1-Ag '60. (MIRA 13:8)

1. Nauchno-issledovatel'skiy Institut sel'skogo khozyaystva
severo-vostochnykh rayonov Nechernozemnoy pology.
(Wheat--Varieties)

BAZHENOVA, R.D., klinicheskiy ordinator

Treating complications arising from rabies vaccination. Sbor.trud.
Tashk.KBNP no.1:148-151 '56 (MIRA 11:3)
(RABIES) (PARALYSIS)

BAZHENOVA, R.V. (Izhevsk)

Functional state of the stomach, pancreas and liver in
workers engaged in an industry involving the use of benzene.
Gig. truda i prof. zab. 6 no.5:37-39 My'62. (MIRA 16:8)

1. Izhevskiy meditsinskiy institut.
(BENZENE—TOXICOLOGY) (VISCERA—DISEASES)

BAZHENOVA, T.K.; CHAYKOVSKAYA, E.V.

Methodology of luminescence studies of the amount and distribution
of bitumen in rocks. Trudy SNIIGINS no.1:126-129 '59.

(MIRA 15:4)

(Bitumen—Geology)

SEREGIN, A.M.; BAZHENOVA, T.K.; VYSOTSKIY, V.I.; ILYUKHEN, L.N.; SHAPENIN,
V.D.

Oil-source and reservoir properties of the Cambrian sediments
of the Yenisey part of the Siberian Platform. Izv. vys. ucheb.
zav.; neft' i gaz 7 no.9:11-13 '64. (MIRA 17-12)

1. Moskovskiy gosudarstvennyy universitet im. Lomonosova.

BAZHENOVA, T.K.; VYSOTSKIY, V.I.; SEREGIN, A.M.

Comparative evaluation of the prospects for finding gas and
oil in the Yenisey portion of the Siberian Platform. Geol.
nefti i gaza 8 no.8:15-19 Ag '64. (MIRA 17:8)

1. Moskovskiy gosudarstvennyy universitet.

BAZHENOVA, T.K.; VYSOTSKIY, V.I.

~~Geotectonic nature of the Yenisey Valley portion of the Siberian Platform. Vest. Mosk. un. Ser. 4: Geol. 20 no.3:24-31 Hy-Je '65. (MIRA 18:7)~~

1. Kafedra geologii i geokhimi goryuchikh iskopayemykh Moskovskogo universiteta.

BAZHENOVA, T.M.

More exact definition of the theorem of the finite difference for
the function $\mathcal{T}(x)$. Uch.zap.Kuib.gos.ped.inst. no.29:21-24
'59. (MIRA 14:8)

(Difference equations) (Numbers, Theory of)

L 65129-65 EMP(m)/EPH(c)/EP(v)/ZAP(s)/T CM/RM
ACCESSION NR: AP5021601

UR/0286/65/000/013/0071/0071

AUTHORS: Pakhomov, V. I.; Bazhenova, T. S.

TITLE: A method for obtaining epoxy organosilicon compounds. Class 39, No. 172496

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 13, 1965, 71

TOPIC TAGS: epoxy, organic chemistry, monomer, thermal stability, adhesion, catalyst

ABSTRACT: This Author Certificate presents a method for obtaining epoxy organo-silicon compounds by ester exchange between monomers and oligomers with glycidol. To obtain epoxy organosilicon compounds with high thermal stability and adhesion to glass and metal, alkynehydridepolysiloxanes or organosilicon monomers and oligomers containing epoxy group, are used as basic materials. Ester exchange is conducted in the presence of alkaline catalysts.

ASSOCIATION: none

SUBMITTED: 01Apr64

NO. REF. SOV: 000

CO. 1/1

ENCL: 00

OTHER: 000

SUB CODE: 00

L 44370-66 EWT(m)/EWP(i)/I/EWP(v) IJP(G) EW/WH
 ACC NR: AP6023060 (A) SOURCE CODE: UR/0191/66/000/004/0018/0019

AUTHOR: Pakhomov, V. I.; Bazhenova, T. S.

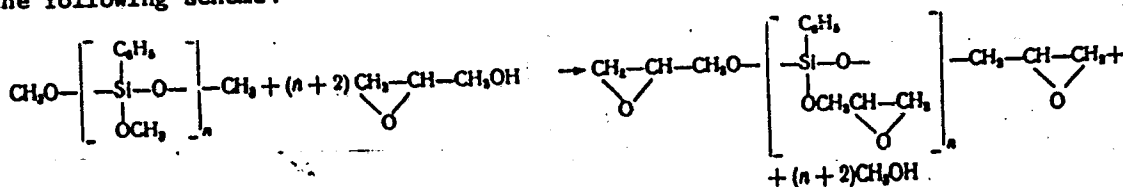
ORG: none

TITLE: Alkyl-(aryl)-glycidoxysilanes and siloxanes

SOURCE: Plasticheskiye massy, no. 4, 1966, 18-19

TOPIC TAGS: adhesive, epoxy plastic, silane, siloxane, organosilicon compound

ABSTRACT: Several alkyl-(aryl)-glycidoxysiloxanes were synthesized by two methods: (I) ester interchange of glycidols of silicoorganic oligomers and monomers containing methoxy-groups connected with silicon atom; (II) substitution of hydrogen in hydridoalkylsilanes and hydridoalkylsiloxanes by glycidooxy-groups. Method I is represented by the following scheme:



Card 1/2

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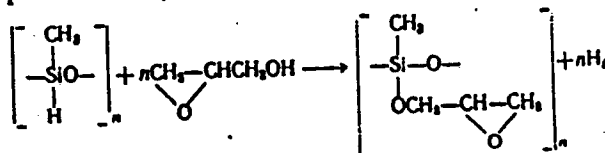
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31
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ACC NR: AP6023066

4

Method II is represented by the following scheme



The ester interchange reaction was carried out in a still of distillation column. The reaction started at 80-100°C and was completed in 0.5-1.5 hours at 130°C. In the presence of 0.1% KOH or 0.1-1.0% triethanolamine or oxyquinoline, the yields were 75-100%. The percentages of epoxy-groups, silicon, and the degree of ester interchange are tabulated. The hydrogen substitution reaction started at room temperature in the presence of 0.01-0.001% KOH. The reaction product was a liquid resin with 2500 cP viscosity, 30% epoxy-groups, and 22% silicon. The various alkyl-(aryl)-glycidoxysilanes and siloxanes prepared by either method adhered well to glasses and metals. They are recommended for use as cements, or cement components. Orig. art. has: 1 table, 2 formulas.

SUB CODE: 07,11/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 003

Card 2/2 hs

10(2)

PLAZA I BOOK EXPIRATION

NOV/21/62

Abendlyrn nauk SSSR. Energeticheskii Institut.

Plazhenskyr gazdinstvina (Physical Gas Dynamics) Moscow, 1959. 167 p. 3,000 copies printed.

Masp. Ed. I. A. S. Fedotkin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: N. I. Kostin; Tech. Ed.: Ye. V. Muzant.

PREPARED: This collection of articles is intended for scientists, workers, instructors, engineers, and students who are interested in the field of gas dynamics and the physics of combustion. SUMMARY: This collection of articles is concerned with the results of experiments performed at the Pomer Institute, Academy of Sciences, during the years 1952-1955. Problems of gas dynamics and thermodynamic properties of air at high temperatures (up to 12,000 K) in a wide range of pressures from 0.001 to 1,000 atm. are discussed. Methods are presented for calculating a normal shock wave. Consideration of the dissociation and ionization of air. Some experiments of the collection deal with hydrodynamic phenomena associated with electric discharges in water. References follow most of the papers.

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Golombin, R. I. Shock Waves Formed by an Electric Discharge in Water. This paper deals with a photographic investigation of the formation of a shock wave resulting from an electrical discharge in water (one-dimensional case). It has a bearing on studies of underwater explosions. A brief description of the method and equipment used to photograph the discharge is given. By analyzing the photographs, a qualitative explanation is obtained of the process taking place during the discharge and the formation of a shock wave. It is shown that the contraction of the rapidly expanding gas bubble may, in the one-dimensional case, lead to the formation of a shock wave from elementary disturbances. Experimental data are presented showing the resulting shock wave. Locally of the shock wave with distance from the spark. The corresponding pressures are calculated on the basis of data from underwater explosions.

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Bakshorn, V. V. Formation of Shock Waves in Water by Superposition of Elementary Waves. This paper is an analytical study of the formation of shock waves in water resulting from underwater explosions. It is assumed that a shock wave can be formed at a given distance from the source of the explosion by the superposition of elementary waves of an arbitrary shape being propagated into the water from the boundary of an expanding gas bubble. The first part of the paper is devoted to the law of expansion of the gas bubble necessary for the formation of a shock wave at a given distance from the explosion. The second part deals with the amount of energy which must be imparted to the water by the expanding gas bubble as a function of time in order for the shock wave to form at a given point.

146
Bakshorn, V. V. Formation of Shock Waves in Water by Superposition of Elementary Waves. This paper is an analytical study of the formation of shock waves in water resulting from underwater explosions. It is assumed that a shock wave can be formed at a given distance from the source of the explosion by the superposition of elementary waves of an arbitrary shape being propagated into the water from the boundary of an expanding gas bubble. The first part of the paper is devoted to the law of expansion of the gas bubble necessary for the formation of a shock wave at a given distance from the explosion. The second part deals with the amount of energy which must be imparted to the water by the expanding gas bubble as a function of time in order for the shock wave to form at a given point.

BAZHENOVA TV

BASHENOVA, T.V.

24(6)

P.2-3

PHASE I BOOK EXPLOITATION

SOV/3201

Akademiya nauk SSSR. Energeticheskiy institut

Gazodinamika i fizika goreniya (Gas Dynamics and Physics of Combustion)
Moscow, Izd-vo AN SSSR, 1959. 170 p. Errata slip inserted. 3,000
copies printed.

Resp. Ed.: A.S. Pradvoditelev, (Corresponding Member, USSR Academy of
Sciences; Ed. of Publishing House: A.L. Bankvitser; Tech. Ed.:
I.N. Guseva.

PURPOSE: The book is intended for physicists and engineers in various indus-
tries, interested in gas dynamics, combustion physics and related fields.

COVERAGE: This collection of articles represents the first attempts of the
laboratory to investigate supersonic wave flow processes of combustion
and explosion. The collection contains thirteen articles by personnel of
the combustion laboratory of the Power Engineering Institute, Academy of
Sciences, USSR, which treat the following aspects of combustion: 1) problems
of turbulent combustion of gas mixtures; 2) the influence of turbulization

Card 1/4

Gas Dynamics (cont.)

SOY/5201

- Razhenova, T.V. Propagation of Waves of Finite Amplitude Which Arise During the Explosion of Gases in a Cylindrical Vessel of Variable Volume 51
- Kayashin, I.F. The Influence of External Friction and Heat Transfer on the Motion of a Flame Front and Explosion Shocks in Chemically Reactive Media 57
- Pashkin, V.S. Some Properties of Supersonic Flows 69
- Ionov, V.P. Supersonic flow in the Region of an Angular Buttress 79
- Ionov, V.P. Supersonic Flow Under Conditions of Backexpansion in Shaped Nozzles During a Change of Reynolds Numbers 84
- Razhenova, T.V. and Z.S. Leont'yeva. Methods of Measuring the Field of Densities of Three-Dimensional Objects With the Aid of the Tepler Method 88
- Razhenova, T.V., Z.S. Leont'yeva and V.S. Pashkin. Experimental Investigation of the Field of Densities of a Three-Dimensional Supersonic Stream 95
- Kudryavtsev, M.G. Measuring the Temperature of High Speed Gas Flow With the Aid of a Thermopile 98

Card 5/4

BAZHENOVA, T.V.

PHASE I BOOK EXPLOITATION

SOV/4913

Salamandra, Genriyetta Davydovna, Tat'yana Valerianovna Bazhenova, Sergey Grigor'yevich Zaytsev, Pem Ivanovich Soloukhin, Ideya Mikhaylovna Naboko, and Irina Konstantinovna Sevast'yanova.

Nekotoryye metody issledovaniya bystroprotekayushchikh protsessov i ikh primeneniye k izucheniyu formirovaniya detonatsionnoy volny (Some Research Methods for Transient Processes and Their Application to the Study of Detonation-Wave Development) Moscow, Izdvo AN SSSR, 1960. 91 p. Errata slip inserted. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Energeticheskiy institut imeni G. M. Krzhizhanovskogo.

Resp. Ed.: A. S. Predvoditelev, Corresponding Member, Academy of Sciences USSR.; Ed. of Publishing House: Ya. A. Klimovitskiy; Tech. Ed.: V. Karpov.

PURPOSE: This book is intended for engineers and scientists engaged in developing research techniques and performing experimental

Card 1/8

Some Research Methods (Cont.)

SOV/4913

studies in the field of shock and detonation phenomena in gas-dynamic processes.

COVERAGE: The book contains the results of original research on methods for investigating transient combustion processes and on the development of detonations under various gasdynamic conditions. The book reviews circuits of spark discharge apparatus and circuits for synchronizing a series of illuminating flashes with the process being investigated. Pulse light sources operating in the regime of frequently repeated flashes are described. A description is also given of simple apparatus designed by the authors for obtaining series of Schlieren photographs with a frequency of 50,000 to 100,000 frames per second for exposures of the order of 10^{-7} sec permitting easy synchronization of the exposure with any gasdynamic process. The construction is shown and an analysis is given of the operation of a piezoelectric pressure transducer which permits reproducing without distortions the shape of a pressure pulse in the case of gasdynamic disturbances.

Card ~~2~~/8

Some Research Methods (Cont.)

SOV/4913

With the aid of the investigation methods developed, a detailed study was undertaken of the mechanism of a detonation occurring during propagation of a flame in a tube and of supersonic flow of gas mixtures capable of reaction in a shock tube. The first chapter was written by G. D. Salamandra; in it a detailed review of various methods used to produce spark photographs of transient processes is given. Certain difficulties which had to be met in the course of the investigations are described and methods for surmounting them are demonstrated. The second chapter, written by S. G. Zaytsev, describes methods for measuring rapidly varying pressures, developed by the Power Engineering Institute of the Academy of Sciences USSR for investigation of the state of gas in shock tubes. The methods have found wide application. The third chapter presents the results of the investigations conducted with the aid of the methods discussed on the mechanism of the development and propagation of detonation waves under various hydrodynamic conditions. These investigations were recently completed at the laboratory for combustion physics by T. V. Bazhenovaya, G. D. Salamandra, R. I. Boloukhniy, S. G. Zaytsev, I. M. Naboko, and I. K. Sevost'yanovaya. Of particular interest

Card 3/8

28355 3/124/61/000/007/027/044
A052/A101

11. P300

AUTHORS: Bazhenova, T. V., Salamandra, G. D.

TITLE: Detonation wave formation at the combustion of gas in tubes

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 7, 1961, 77, abstract 7B527
(V sb. "3-ye Vses. soveshchaniye po teorii goreniya. T. 1". Moscow, 1960, 175-177)

TEXT: The process of transition of slow combustion in a tube into detonation was investigated. Two tubes were used: one of a square section 36 x 36 mm and the other tube, a round one, 42 mm in diameter. The tubes were filled with a stoichiometric oxygen-hydrogen mixture. The time base of the process and a series of schlieren-photographs of the flame front and of shock waves are given. In the first stage following the ignition the flame front is moving with acceleration and gives rise, before itself, to a series of disturbances cumulating in a shock wave. This wave however has a small amplitude ($M \sim 1.5$) and is not in a position to ignite the mixture. As the flame propagates and the volume of the burnt out mixture increases, the expulsive action of the mixture diminishes and the flame is slowed down. Thereafter the front takes an irregular form, its

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28355 S/124/61/000/007/027/044
A052/A101

Detonation wave formation ...

surface increases, which leads to a new acceleration of the front. In this stage the flame front sends forth many compressive disturbances and the shock wave forms right ahead of the flame front. The flame front and the shock wave form a single set moving with the same velocity and almost undivided in space. Behind the front a long tail extends in which the afterburning takes probably place. A calculation has shown that detonation takes place in a gas moving with a velocity of ~ 900 m/sec and heated to 525°K at a pressure of ~ 7 at. The flame moves in the unburnt gas with a velocity near to the sound velocity in it, i.e., ~ 700 m/sec.

Yu. R. H

[Abstracter's note: Complete translation]

Card 2/2

30986

S/124/61/000/009/007/058
D234/D303

26.7311

AUTHORS: Bazhenova, T.V. and Zaytsev, S.G.

TITLE: Effect of dissociation on the parameters of shock waves in CO₂

PERIODICAL: Referativnyy zhurnal. Mekhanika, no. 9, 1961, 13, abstract 9 B64 (V sb. "3-e Vses. soveshchaniye po teorii goreniiya", v. 1, M., 1960, 208-213)

TEXT: The authors studied the state of CO₂ in a shock tube behind the shock wave reflected from the end. Calculations of the velocity of the reflected wave as dependent on Mach number were made with four assumptions: 1) Equilibrium dissociation is reached behind the incident and the reflected wave; 2) behind the incident wave internal degrees of freedom are excited, but there is no dissociation, and behind the reflected wave there is equilibrium dissociation, 3) behind both waves internal degrees of freedom are excited, but there is no dissociation, 4) there is no dissociation

Card 1/2

X

Effect of dissociation...

30986
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D234/D303

and internal degrees of freedom are not excited behind either wave. The experiments were carried out on a shock tube with CO_2 at the initial pressure of 0.017 atm. Mach numbers of the incident wave varied between 4 and 11. The velocities of the incident and the reflected wave were measured on photographs made by the method of continuous scanning. The duration of permanence of gas at high temperatures in the reflected wave was approximately 10^{-5} - 10^{-4} sec. Comparison of calculated and measured values of the velocities of reflected shock waves showed that for $M \approx 4 - 6$ there is an incomplete excitation of internal degrees of freedom behind the reflected wave ($T \approx 1000^\circ\text{K}$, $p \approx 1$ atm). For $M \approx 8 - 11$ ($T \approx 5000 - 7000^\circ$ without taking dissociation into account, $p \approx 20 - 30$ atm) internal degrees of freedom in the gas behind the reflected wave are completely excited but dissociation does not occur. [Abstracter's note: Complete translation]

Card 2/2

X

PHASE I BOOK EXPLOITATION SOV/5698

Akademiya nauk SSSR. Energeticheskiy institut.

Fizicheskaya gazodinamika i teploobmen (Physical Gas Dynamics and Heat Exchange) Moscow, 1961. 112 p. Errata slip inserted. 4,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Energeticheskiy institut im. G. M. Krzhizhanovskogo.

Resp. Ed.: A. S. Predvoditelev, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: S. L. Orpik; Tech. Ed.: S. P. Golub'.

PURPOSE : This book is intended for engineers and scientific workers interested in supersonic flow of gases, aerodynamic heat phenomena, and the dissociation of gases.

COVERAGE: This collection consists of 15 papers written at the Laboratoriya fiziki goreniya Energeticheskogo instituta Akademii

Card 1/5

Physical Gas Dynamics and (Cont.)

SOV/5698

nauk SSSR (Laboratory of Combustion Physics of the Power Institute of the Academy of Science USSR) on investigations on the physics of gas dynamics and phenomena of heat exchange in supersonic flows. In the field of physical gas dynamics motions of the medium with possible transformations of the substance, not excluding such processes as the thermal ionization of molecules and atoms, are discussed. No personalities are mentioned. References follow most of the articles.

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<u>Bazhenova, T. V., and Yu. S. Lobasov.</u> Effect of Ionizing Admixtures on the Absorption of Radio waves by the Gas Behind a Shock in a Shock Tube		36
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Physical Gas Dynamics and (Cont.)

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- Morozov, M. G., V. M. Yeroshenko, and Yu. N. Petrov. Flow in Stagnation Areas on the Surface of Bodies in a Supersonic Flow of Air 60
- Yeroshenko, V. M. Heat Exchange on a Porous Plate in a Supersonic Flow With a Supply of Gases of Various Physical Properties [Passing] Through the Porous Body 66
- Yeroshenko, V. M. Heat Exchange on a Porous Surface of the Frontal Part of a Cylinder in a Longitudinal Supersonic Flow 76
- Petrov, Yu. N. Heat Insulated Plate in a Longitudinal Supersonic Flow With the Presence of a Boundary Layer of Gas 81
- Petrov, Yu. N. Cooling of the Frontal Surface of a Cylinder
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Physical Gas Dynamics and (Cont.)

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With Local Supply of Refrigerant in a Longitudinal Supersonic Flow

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Motulevich, V. P., V. M. Yeroshenko, and Yu. N. Petrov. Effect of Electrostatic Fields on Convective Heat Transfer

94

Motulevich, V. P., and G. P. Malyshev. Effect of Dissociation on Heat Exchange and Friction in a Plate in a Flow of Air

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AVAILABLE: Library of Congress

Card 5/5

AC/rn/jw
11-6-61

BAZHENOVA, T. V.

"Evaluation of time of relaxation of carbon dioxide dissociation according to shock tube experiments",

"Determination of the dissociated CO₂ flow condition after the normal shock on the rarefaction wave arising while flowing around a protuberant angle",

"Research on absorption of radio waves by air following the shock wave" with LOBASTOV, U. S.

Report to be submitted for the 9th Intl. Symposium on Combustion, Ithaca, New York 27 Aug. - 1 Sep 1962.

Affiliated with Inst. of Energetics im. G. M. Krzhizhanovskiy, Moscow.

L 15728-63

EPA(b)/EWT(1)/BDS/ES(w)-2

AFFTC/ASD/ESD-3/IJP(C)/SSD

Pd-4/Pab-4/Pi-4/Po-4

ACCESSION NR: AR3002667

8/0124/63/000/005/B025/B025

SOURCE: Rzh. Mekhanika, Abs. 5B123

AUTHOR: Bashenova, T.V.; Lobastov, Yu. S.

TITLE: Experimental determination of the nature and concentration of easily ionized impurities according to absorption of radio waves behind a shock wave

CITED SOURCE: Sb. Vopr. magnitn. gidrodinamiki i dinamiki plazmy. v. 2. Riga, AN LatvSSR, 1962, 371-378

TOPIC TAGS: absorption, radio wave, ionized impurity, shock wave, argon, ionization

TRANSLATION: Experiments are conducted to measure the absorption of radiowaves in argon behind the front of a shock wave which is produced in a shock tube. A comparatively low temperature range was studied, from 2000 - 4000° K, when the appearance of free electrons is linked to the presence of impurities which ionize easily. The speed of the shock wave, along which the temperature of the gas T is calculated, was measured. The attenuation of the radiowave, which intersects

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L 15728-63

ACCESSION NR: AR3002667

the tube at 7 cm was measured. The frequency of the radiowave was 10^4 megacycles (3 cm wave length). The absorption coefficient for the radiowaves was related to the number of free electrons in 1 cm^3 of gas n_e . With respect to the absorption, (in each experiment) the electron concentration, n_e was determined,

from which there was constructed the dependence of $\ln n_e^2$ on $1/T$. The inclination of the straight line determines the ionization potential of the ionized impurities. Then, after the explanation of the nature of the impurity gas, using the Saha formula, the initial concentration of the impurities is calculated. Experiments conducted with argon under initial pressures of the order of 10 mm of mercury and shock wave velocities of 3 to 5 km/sec. The absorption of radiowaves was measured only in the reflected shock wave, where the temperature was 2000-4000° K (the argon is very weakly ionized). The potential of the detected impurity is indicated to be equal to 5.1 ev, which corresponds to sodium. The concentration of sodium pairs in argon proved to be of the order of $10^{-5}\%$.
Yu.R.

DATE ACQ: 14Jun63

SUB CODE: PH

ENCL: 00

Card 2/2

36522

S/081/62/000/006/019/117
B166/B101

10.1410
AUTHORS:

Bazhenova, T. V., Predvoditeleva, O. A.

TITLE:

The value of the air parameters beyond a normal shock and the reflected shock wave with equilibrium and frozen dissociation

PERIODICAL:

Referativnyy zhurnal. Khimiya, no. 6, 1962, 57, abstract 6B386 (Sb. "Fiz. gazodinamika i teploobmen". M. AN SSSR, 1961, 15-24)

TEXT: The results are given of a computation of the air parameters behind incident and reflected shock waves based on the assumption of the following states behind the front: attainment of equilibrium dissociation; excitation of internal degrees of freedom without dissociation; without either excitation of internal degrees of freedom or dissociation. The calculations refer to wave velocities from 1400 to 6000 m/sec and initial pressures from 10^{-5} to 10^{-3} . [Abstracter's note: Complete translation.]

Card 1/1

10.1200

35740
S/124/62/000/003/008/052
D237/D301

AUTHOR: Bazhenova, T.V.

TITLE: Gas flow velocity determination behind the discontinuity in a shock-tube

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 3, 1962, 15, abstract 1B75. (Sb. fiz. gazodinamika i teploomen. M., AN SSSR, 1961, 31 - 35)

TEXT: The distribution of stream velocities between the shockwave front and the contact surface of the discontinuity in air for Mach No.'s from 2 to 6 and in argon for Mach No.'s from 2 to 5, i.e. under conditions when physico-chemical processes in the gas do not influence the stream parameters noticeably, was obtained by applying the analysis of Tepler flow branches in the shock tube. The author reaches the following conclusions: 1) Gas velocity behind the shock-wave in the shock tube can be measured from the slope of the traces of small density variations on the Tepler branches of the process; 2) Gas velocity increases continuously in the gas layer between the shock-wave and the contact surface; 3) Velocity of the Card 1/2

Gas flow velocity determination ...

S/124/62/000/003/008/052
D237/D301

gas increases faster than according to the law of growth of the laminar boundary layer on the walls of the tube, i.e. faster than according to law $\sim\sqrt{x}$ (x - distance from the front of the shock-wave). Widening of the gaseous layer ceases at the distance of order of 50 diameters of the tube. [Abstractor's note: Complete translation].

Card 2/2

J

S/885/62/000/000/010/035
D234/D308

AUTHORS: Bazhenova, T. V. and Zaytsev, S. G.

TITLE: Parameters of CO₂ behind the reflected shock wave and the estimation of the time of establishing the equilibrium dissociation at 4000 - 5000°K

SOURCE: Akademiya nauk SSSR. Energeticheskiy institut. Fizicheskaya gazodinamika, teploobmen i termodinamika gazov vysokikh temperatur. Moscow, Izd-vo AN SSSR, 1962, 111-119

TEXT: The authors give a table of parameters behind the reflected shock wave, calculated under four different assumptions: 1) equilibrium dissociation behind the incident and the reflected wave; 2) equilibrium dissociation behind the reflected wave; excitation of inner degrees of freedom without dissociation behind the incident wave; 3) excitation of inner degrees of freedom without dissociation behind both waves; 4) no dissociation and no excitation of inner degrees of freedom behind either wave. Experiments on

Card 1/2

Parameters of CO₂ ...

S/885/62/000/000/010/035
D234/D308

reflection of shock waves were carried out at an initial pressure of 0.017 atm, the numbers M of the incident wave varied from 4 to 11. The experimental installation is described in detail. The results, for M between 3 and 6, are situated between theoretical D₂ curves corresponding to non-excited and fully excited inner degrees of freedom. For M between 6 and 11 the experimental points are on the curve calculated for fully excited inner degrees of freedom and frozen-in dissociation. The pressure behind the reflected wave depends on M and varies between 15 and 35 atm. Measured time of establishing of equilibrium values of velocity of the reflected wave and the time of establishing the equilibrium concentration are also given. There are 9 figures and 2 tables.

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10.1410

S/020/62/146/003/005/019
B172/B186

AUTHOR: Bazhenova, T. V.

TITLE: Estimation of the relaxation time for the dissociation of CO₂ from experiments in a shock tube

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 3, 1962, 554-556

TEXT: Experiments in a tube filled with CO₂ showed that the velocity of the reflected shock wave is nonuniform. The highest values were obtained immediately after reflection, whereas at the end of the gas plug, behind the incident wave, a decrease was observed. This effect is explained by the approximation of the gas state behind the reflected wave to equilibrium. A formula is given for estimating the relaxation time from the measured velocities and temperatures. There are 4 figures and 1 table. ✓B

ASSOCIATION: Energeticheskiy institut im. G. M. Krzhizhanovskogo (Power Engineering Institute imeni G. M. Krzhizhanovskiy)

PRESENTED: March 17, 1962 by V. N. Kondrat'yev, Academician

SUBMITTED: March 10, 1962
Card 1/1

ACCESSION NR: AR3006254

S/0124/63/000/007/B022/B023

SOURCE: RZh. Mekhanika, Abs. 7B106.

AUTHOR: Salamandra, G. D.; Bazhenova, T. V.; Sevast'yanova, I. K.

TITLE: The role of weak shock waves in the formation of detonations

CITED SOURCE: Tr. Odessk. un-ta. Ser. Fiz. n., v. 152, no. 8, 1962, 91-94

TOPIC TAGS: shock wave, detonation, combustion

TRANSLATION: The authors studied the process of transition of slow combustion into a detonation. The experiments were carried out in pipes of circular cross-section 14 to 42 mm in diameter and of square cross-section (36.5 mm x 36.5 mm). The combustible mixtures were of the hydrogen-oxygen, methane-oxygen, and acetylene-oxygen type, since in these mixtures shock waves are formed a short distance from the point of inflamation. The combustive priming was at the closed end of the pipe. Observations were made of the propagation of the flame and the process of accumulation of weak perturbations proceeding from the flame into a shock wave. The process was photographically scanned and also recorded by high-speed photography with a frequency of 100,000 frames per second. Determinations were made of the distances

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ACCESSION NR: AR3006254

from the point of inflagr^{ation} to the point of impact wave formation for various mixtures and pipes of various diameters; the results were tabulated and graphed. For a given mixture, the distance increases linearly with increase of the pipe diameter. The experimental values are in good agreement with the calculated ones obtained by the method of characteristics on the basis of the experimental law of flame motion. It is shown that the formation of the shock wave does not lead to an immediate transition from slow burning to a detonation. The formation of the detonation wave takes place much later and is related to the interaction of the flame with the shock waves arising in front of the flame front in the pre-detonative stage. Yu. R.

DATE ACQ: 08Aug63

SUB CODE: PH

ENCL: 00

Card 2/2

ACCESSION NR: AR3006262

S/0124/63/000/007/B111/B111

SOURCE: RZh. Mekhanika, Abs. 7B668

AUTHOR: Bazhenova, T. V., Lobastov, Yu. S.

TITLE: Measurement of the degree of gas ionization in an impact tube and the determination of the nature and concentration of easily-ionized admixtures

CITED SOURCE: Tr. Odessk. un-ta. Ser. fiz. n., v. 152, no. 8, 1962, 95-97

TOPIC TAGS: gas ionization, impact tube, gas admixture

TRANSLATION: The authors give a description of a setup for measuring the degree of gas ionization in an impact tube (70 X 70 X 140 mm) according to radio absorption. The measuring apparatus consists of a 3-cm wave generator, a detector, and an electronic oscillograph with a wide-band d.c. amplifier in a slave sweep regime. The authors give a method for calibrating the receiving apparatus. From the measured coefficient of radio wave transmission, gas temperature and pressure determined from the speed of the shock wave, determinations were made of the electron concentration n_e and the ionization potential ϕ . From n_e and ϕ determinations were made of the nature and concentration of easily-ionized admixtures in the gas. The above apparatus makes it possible to determine the degree of gas

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ACCESSION NR: AR3006262

ionization at relatively low temperatures (2000-4000°K) and pressures, when $n_e < 10^{13} \text{cm}^{-3}$, and the number of collisions is on the order of 10^{10} . A. V. Pustogarov.

DATE ACQ: 08Aug63

SUB CODE: PH

ENCL:00

Card 2/2

SOLOUKHIN, Rem Ivanovich; BAZHENOVA, T.V., red.; KOLESNIKOVA, A.P.,
tekhn. red.

[Shock waves and detonations in gases] Udarnye volny i deto-
natsiia v gazakh. Moskva, Fizmatgiz, 1963. 175 p.
(MIRA 16:8)

(Shock waves) (Detonation)

1 10725 63

EFB/EFR(b)/EWT(1)/BDS/EEC(b)-3--AFPTC/ASD--Ps-4/Pd-1

ACCESSION NR: AP3003842

8/0020/63/151/003/0519/0521

AUTHOR: Bazhenova, T. V.; Lobastov, Yu. S.

TITLE: Measurement of time required to attain equilibrium concentration of electrons behind a shock wave in air

SOURCE: AN SSSR. Doklady*, v. 151, no. 3, 1963, 519-521

TOPIC TAGS: shock wave in air, electron concentration, NO ions, radio-wave absorption measurement

ABSTRACT: The time required for attainment of the electron equilibrium concentration behind a shock wave in air was determined by measuring the absorption of 3-cm radio waves by a method developed earlier by the author. In the experiments waveguide horns with a cross section of 10 x 70 mm were installed perpendicularly to the shock-wave motion, 5 m from the diaphragm of the shock tube (cross section, 70 mm x 70 mm). The signal from a piezoelectric pressure pickup mounted in the same cross section as the horns was used to actuate the simultaneous start of oscillographic absorption and pressure recording. Control tests with argon at 0.1 atm and 2500--3000K showed that electrons formed by ionization of vapors of alkali metals in the shock tube or the gas do not absorb radio waves under the

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L 10736-63

ACCESSION NR: AP3003842

2

conditions studied. Calculated equilibrium electron concentrations and the maximum electron concentrations measured in air were plotted versus Mach numbers (see Fig. 1 of Enclosure). The results showed that at low M (M = 7-9, T = 2000-3000K) radio-wave absorption corresponds to the near-equilibrium concentration, but at higher M (9-11) it is somewhat lower. The time required for attainment of electron equilibrium concentration is shorter than that for NO equilibrium concentration. The time required for attainment of maximum and equilibrium concentrations differs only slightly. The experimentally determined maximum concentrations agree with values calculated on the basis of the mechanism $N + O + M = NO^+ + e + M$, with a recombination constant of $2 \cdot 10^{-6} \text{ cm}^3/\text{sec}$, while time calculated on the basis of the mechanism $NO + M = NO^+ + e + M$ gave values greater by several orders of magnitude than those obtained experimentally. The article was presented by Academician V. N. Kondrat'yev, 2 November 1962. Orig. art. has: 2 figures.

ASSOCIATION: Energeticheskiy Institut im. G. M. Krzhizhanovskogo (Power Engineering Institute)

SUBMITTED: 10Mar62

DATE ACQ: 15Aug63

ENCL: 01

SUB CODE: 00

NO REF SOV: 006

OTHER: 002

Card 2/2

BAZHENOVA, T.V.; NABOKO, I.M. (Moscow)

"Experimental investigation of the influence of non-equilibrium physical and chemical transformations in CO₂ on the flow parameters behind the shock wave and on the shock wave reflection"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964

12:15-55 SWT(1)/RPT(c)/T/SEC(t)/EPA(w)-2/EWA(n)-2 Pr-L/Pab-10/Pb-L SSD/
RPT(1)/AS(p)-2/ANND(e)/ASL(p)-3/AN(a)-2/USD/AMW/APRTR/AND/SEM/S

ACCESSION NR: AT4048002

5/0000/64/000/000/0017/0011

AUTHOR: Bazhenova, T. V.; Lobastov, Yu. S.

TITLE: On the mechanism of thermal ionization of air

SOURCE: AN SSSR. Energeticheskiy institut, Fizicheskaya gazodinamika i teoretiva gazov pri vysokikh temperaturakh (Physical gas dynamics and properties of gases at high temperatures). Moscow, Izd-vo Nauka, 1964, 17-21

TOPIC TAGS: thermal ionization, radio wave attenuation, shock tube, shock wave, equilibrium electron concentration, air ionization, radio wave absorption, attenuation coefficient

ABSTRACT: The mechanism of thermal ionization of air behind shock waves within a range of Mach 9-12 is considered on the basis of available experimental data on the absorption of radio waves by the ionized gaseous medium. These data show that the time dependence of the absorption of radio waves is given by a curve with a maximum which corresponds to the maximum electron concentration in the nonequilibrium region. An analysis of the time necessary to attain

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L 12418-65

ACCESSION NR: AT4048002

maxima of the absorption and attenuation coefficients is presented on the basis of existing hypotheses on the mechanism of thermal ionization of air. A comparison of the equilibrium and maximum values of electron concentrations behind a shock wave in air at a pressure of $P = 10^{-3}$ atm is given in tabular form, and shows that at 20°C the maximum concentrations approach equilibrium. It is concluded that double collisions are the leading process of air ionization according to the reaction $\text{N} + \text{O} \rightarrow \text{N}^+ + \text{O}^-$. fig. art. has: 1 figure, 1 table, and 11 formulas.

ASSOCIATION: None

SUBMITTED: 06Mar64

ATD PRESS: 3/2/

ENCL: 00

SUB CODE: ME, EC

NO REF SOV: 005

OTHER: 004

Card 2/2

L 20823-65 EWP(m)/EWA(h)/EWT(1)/FCS(k)/ Pd-1/P1-4/ AEDC(a)/ASD(a)-5/AFWL/
SSD(5)/SSD/SSD/ASD(f)-3/AS(ep)-2/ASD(p)-3/AFETR/ESD(gs)/ESD(t) MLK

ACCESSION NR: AT4048004

S/0000/64/000/000/0029/0033

AUTHOR: Bazhenova, T. V., Lobastov, Yu. S.

TITLE: Electron concentration and the number of collisions of electrons with air molecules behind a shock wave |

SOURCE: AN SSSR. Energeticheskij institut. Fizicheskaya gazodinamika i svoystva gazov pri vy'sokikh temperaturakh (Physical gas dynamics and properties of gases at high temperatures). Moscow, Izd-vo Nauka, 1964, 29-33

TOPIC TAGS: gas dynamics, plasma flow, shock wave, plasma electron concentration, electron density, damping coefficient

ABSTRACT: This is a continuation of previous work by one of the authors on plasma shock-waves. Relationships between collision frequency, temperature and pressure for the hard sphere model are given on the basis of the classical cross section which is one quarter of the quantum mechanical one. Thus, experiments in which the collision rate γ and the free electron concentration n_e can be determined independently, such as by the measurement of absorption at two frequencies, are important. Expressions are given for the damping coefficients at the low electron densities behind shock-fronts and the possibility of determining γ and n_e by this method is calculated for 3.4 and 1.8 cm
Card 1/2

L 20823-65

ACCESSION NR: AT4048004

radiowaves with Mach 6-11 shocks and an initial pressure of 10^{-3} atmospheres. This is not possible for an incident shock since V^2 is two orders of magnitude smaller than w_1 and w_2 , but information about V and n_c can be obtained from a reflected shock where the pressure is high and v is commensurable with w_1 and w_2 . Series expansions for the damping coefficients and developed and from this, an expression for n_c in terms of w_1 , w_2 and V is derived and solved by successive approximation. The absorption coefficient was measured in a 7 x 7 cm shock tube for a reflected wave at a distance of 5 m from the diaphragm. Two series of experiments at various Mach values were carried out and data for $M = 6.6$ and 7.35 were calculated. Expressions are given for the errors which justify the zero-order equations. Orig. art. has: 2 tables and 12 equations

ASSOCIATION: Energeticheskii institut AN SSSR (Power Engineering Institute, AN SSSR)

SUBMITTED: 06Mar64

ENCL: 00

SUB CODE: ME, *NP*

NO REF SOV: 005

OTHER: 002

Card 2/2

L 13804-65 EMT(1)/EAP(m)/FCS(k)/EML(h) Pd-1/Pi-4 AEDC(a)/AED(a)/AEDC(b)/
AFNL/SSD/BSD/ADD(f)-2/ASD(p)-3/AFIC(a)/AFICR/ SC(b) MLR

ACCESSION NR: AT4048010

S/0000/64/000/000/0080/0091

AUTHOR: Bazhenova, T. V.; Naboko, I. M.; Predvoditeleva, O. A.

TITLE: Effect of dissipation on flow parameters behind a shock wave in a shock tube

SOURCE: AN SSSR. Energeticheskiy institut. Fizicheskaya gazodinamika i svoystva gazov pri vy'sokikh temperaturakh (Physical gas dynamics and properties of gases at high temperatures). Moscow, Izd-vo Nauka, 1984, 80-91

TOPIC TAGS: shock tube, shock wave, shock wave attenuation, shock tube theory, laminar boundary layer, shock wave velocity

ABSTRACT: The phenomenon of variation of a shock-wave velocity along a shock tube is considered; such variation is the consequence of the gas state in the flow between the shock wave and the contact front. Various factors affecting the gas parameters behind a shock wave are studied. A brief survey of the available literature on shock-wave attenuation and contact-front acceleration is presented, showing that tube walls make a substantial difference in the one-dimensional theory

Card 1/2

L 13804-65

ACCESSION NR: AT4048010

of shock waves. The possibility of calculation of the flow parameters behind a shock wave is investigated on the basis of the available solution for the flow in a shock tube, taking the laminar boundary-layer effect into account. Gas parameters along the length of the shock tube are obtained from the shock velocity-variation function. The results of experimental measurements of the flow Mach number behind the shock wave are compared with the theoretical values of shock-wave velocity, and the deviations are discussed. Orig. art. has: 7 figures, 1 table, and 15 formulas.

ASSOCIATION: none

SUBMITTED: 06Mar64

ENCL: 00

SUB CODE: ME

NG REF SOV: 006

OTHER: 008

ATD PRESS: 3132

Card 2/2

L 12362-65 ENT(1)/ENP(m)/ENG(v)/FSS(k)/EVA(1)/EVA(1) Pd-1/Pe-5/Pi-4
BSD/AEDC(b)/AS(mp)-2/AEDC(a)/ASD(f)-2/AFVL/SSD/SSD(b)

ACCESSION NR: AT4048011

S/0000/64/000'000/0092/0099

AUTHOR: Bazhenova, T. V.; Predvoditeleva, O. A.; Nadezhina, T. V.

TITLE: Losses due to reflection of shock waves from the end of a shock tube

SOURCE: AN SSSR. Energeticheskiy institut. Fizicheskaya gazodina-
mika i svoystva gazov pri vy*sokikh temperaturakh (Physical gas
dynamics and properties of gases at high temperatures). Moscow,
Izd-vo Nauka, 1964, 92-99

TOPIC TAGS: shock tube, shock wave reflection, heat transfer, shock
wave reflection loss, thermal flux

ABSTRACT: The authors experimentally investigated the energy losses
due to shock waves being reflected from various types of end faces
in a shock tube (losses caused by heat transfer to the tube walls).
In this instance, flow bifurcation did not affect the flow structure.
Brief descriptions of the apparatus and procedure are given. The
pressures behind the reflected and incident shock waves and the
velocities of the reflected shock wave were measured in nitrogen

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L 12362-65

ACCESSION NR: AT4048011

within a range of Mach 4 to 7, with an initial pressure of 12.7 mm Hg, then plotted in graphs. A comparison of the measured values of pressures and velocities with theoretical values shows the presence of losses which decrease the velocities of reflected shock waves by an average of 7 to 10%. Heat fluxes to the wall behind the shock wave were calculated by means of successive approximations. The results presented in graphical and tabular form show that time dependences of temperature and thermal flux are not constants. As the decrease in the velocity of the reflected shock wave is a consequence of the energy loss, the latter can be experimentally evaluated by the change in velocity. A numerical example given for a shock wave in nitrogen at $M = 5.8$, initial pressure 0.0167 atm, and reflected-wave velocity 570 m/sec shows that the energy losses due to shock-wave reflection caused by nonadiabatic processes are one order of magnitude smaller than the total energy losses. Orig. art. has: 8 figures.

ASSOCIATION: none

SUBMITTED: 06Mar64

ATD PRESS: 3126

ENCL: 00

SUB CODE: ME

NO REF SOV: 006

OTHER: 000

Card 2/2

BAZHENOVA, T.V.; ZAYISAV, S.G.; NABOKO, I.M.

Studying gas flow in a shock tube with the method of high-speed
spark filming. Usp.nauch.fot. 9:215-218 '64.

(MIRA 18:11)

L 12011-66 FSS-2/EWT(1)/EWP(m)/EWA(d)/T/FCS(k)/EWA(c)/EWA(1) IJP(c)

ACC NR: AT6001409

SOURCE CODE: UR/3180/64/009/000/0215/0218

AUTHOR: Bazhenova, T. V.; Zaytsev, S. G.; Naboko, I. M.

ORG: none

TITLE: The study of gas flow through shock tubes using high speed spark photography

SOURCE: AN SSSR, Komissiya po nauchnoy fotografii i kinematografii. Uspekhi nauchnoy fotografii, v. 9, 1964. Vysokoskorostnaya fotografiya i kinematografiya (High-speed photography and cinematography), and insert facing page 224

TOPIC TAGS: high speed photography, electric discharge, light source, shock wave analysis, schlieren photography

ABSTRACT: This article discusses photography of high-speed processes in shock tubes, using a high-quality spark discharge. A spark discharge circuit is shown with a "linear" light source consisting of a discharge tube filled with hydrogen at 1 atm and having a variable spark distance. The 1 μF capacitor battery charged by a 22 kV source is discharged through a 7 kOhm resistance into the spark discharge circuit with a capacity of

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84
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L 12011-66

ACC NR: AT6001409

0.02 μ F yielding short-lived (to 10^{-6} sec) high brightness sparks. The photographic process is synchronized by means of a synchronization block the design and operation of which is described. The operation of the device is illustrated by photographs showing the propagation of a shock wave, the generation and propagation of the $4H_2 + O_2$ reaction in gases, and the structure of the shock wave and of the gas flow behind such a wave. Orig. art. has: 5 figures.

SUB CODE: 14, 20 / SUBM DATE: none

Card 2/2

ACCESSION NR: AP4012092

8/0020/64/154/002/0401/0403

AUTHOR: Bazhenova, T. V.; Naboko, I. M.

TITLE: Concerning the rate of physicochemical transformations of the CO₂ molecule behind the shock wave at temperatures from 2000 to 4000 K.

SOURCE: AN SSSR. Doklady*, v. 154, no. 2, 1964, 401-403

TOPIC TAGS: carbon dioxide, carbon dioxide dissociation, shock wave, molecular excitation, Tepler Schlieren method, high frequency photography, symmetric valency vibration, asymmetric valency vibration, Mach number

ABSTRACT: The parameters of the flow behind the shock wave in passing an obstacle in the shock tube have been experimentally determined. These parameters depend on excitation and dissociation of molecules and on their relaxation. The Tepler method was used. The flash frequency was about 60,000 sec⁻¹ and the tube was 5.5 m long. Details of synchronization of the flashes and of the processes under study were described by G. D. Salamandra, T. V. Bazhenova, et al. in Nekotory metody* issledovaniya bystroprotoknyushchikh protsessov i ikh primeneniye k izucheniyu formirovaniya detonatsionnoy volny*, Izd. AN SSSR, 1960. It was concluded that at

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ACCESSION NR: AP4012092

Mach numbers from 6 to 11 there is no dissociation of CO₂ molecules behind the shock waves at a distance of 5 to 15 cm from the discontinuity (time involved is 100 to 250 microseconds). Also, the molecular vibrations in CO₂ are only partially excited. The asymmetrical valency vibrations could not be excited. "The work was performed under the direction of A. S. Predvoditelev, Corr. Member AN SSSR." Orig. art. has: 2 figures.

ASSOCIATION: Energeticheskiy Institut im. G. M. Krzhizhanovskogo (Power Institute)

SUBMITTED: 12Aug63

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: AI

NO REF SOV: 006

OTHER: 007

Card 2/2

L 36937-66 EWP(m)/EWT(m)/EWT(1) WH/JW/GD
ACC NR: AT6022661 SOURCE CODE: UR/0000/66/000/000/0180/0182
AUTHOR: Bazhenova, T. V. 59
ORG: none 58
TITLE: Determination of equilibrium relaxation time from experimental data on the 8+1
unsteady propagation of a reflected shock wave
SOURCE: AN SSSR. Energeticheskiy institut. Issledovaniya po fizicheskoy gazodinamike
(Studies of physical gas dynamics). Moscow, Izd-vo Nauka, 1966, 180-182
TOPIC TAGS: gasdynamics, gas relaxation, dissociated gas, equilibrium flow, shock
wave motion, shock wave velocity, shock wave reflection
ABSTRACT: The author considers the problem of the unsteady propagation of a reflected
shock wave as a variation of the problem treated by D. A. Spence of unsteady shock
propagation produced by a piston, but with the piston velocity equal to zero. Thus,
for the case of shock reflected from a rigid wall, the Mach number of the flow behind
the shock wave with respect to M of the shock wave is given by $M = V_0/a_0$, where V_0
is the velocity of the reflected shock wave in the absence of dissociation and a_0 is
the frozen speed of sound in the gas behind a reflected shock wave. The application
of the relationship between relaxation time τ_0 and time corresponding to the approach
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L 36937-66

ACC NR: AT6022661

to the equilibrium shock speed τ_g , derived by Spence

$$\tau_0 = \tau_g \frac{2 \ln 2}{1 - M^2} \left(\frac{1 + \frac{3\gamma - 1}{3 - \gamma} M^2}{1 + 2 \frac{\gamma - 1}{3 - \gamma} M^2} \right)^2$$

to the results of measurements of time necessary for the establishment of equilibrium velocity of the reflected shock wave in CO_2 shows that the time of dissociative relaxation τ_0 is 1.5 times smaller than the time τ_g necessary for the establishment of equilibrium shock wave velocity. Some data on relaxation time can also be obtained from measurement of CO_2 concentrations and temperature behind the incident shock wave determined by ultraviolet absorption. From comparison of the results obtained here with available data it follows that the time of dissociative relaxation of CO_2 with 2% water vapor behind a shock wave at temperatures of 3000—6000 K and reduced to atmospheric pressure is of the order of $3-1 \times 10^{-4}$ sec. Calculations of the relaxation time make it possible to determine distances at which equilibrium is achieved behind the normal shock wave. Thus with pressure of 1 atm behind the shock with free-flow velocity of 4 km/sec equilibrium is attained at 3-cm distance from the shock front, with 3 km/sec velocity at 10 cm and with 2.5 km/sec velocity at more than 15 cm. Orig. art. has: 2 tables. [AB]

SUB CODE: 20/ SUBM DATE: 31Feb66/ ORIG REF: 006/ ATD PRESS: 5039

Card 212/116

ACC NR: AT6022654

SOURCE CODE: UR/000/66/000/000/0131/0138

AUTHOR: Bazhenova, T. V. ; Lobastov, Yu. S.

ORG: none

TITLE: Secondary phenomena of reflections of shock waves in argon

SOURCE: AN SSSR, Energeticheskiy institut. Issledovaniya po fizicheskoy gazodinamike (Studies of physical gas dynamics). Moscow, Izd-vo Nauka, 1966, 131-138

TOPIC TAGS: plasma, shock wave, argon, shock tube, shock wave interaction, shock wave propagation

ABSTRACT: The authors analyze some results of investigations of the ²ionization processes in argon behind reflected shock waves and describe the secondary effects, namely the nonstationary propagation of the reflected shock wave and the phenomena occurring during the interaction of the reflected shock wave in argon with the contact surface in the shock tube. Experiments were made in a shock tube of a 72 x 72-mm cross section at a distance of 4.7 and 6 m from a diaphragm. In order to follow the

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ACC NR: AT6022654

processes accompanying the reflection of a shock wave, time pattern of the Tepler reflection is shown and explained in figures in the original article. The influence of nonequilibrium ionization on the reflected shock-wave propagation in argon is examined in detail. The interaction of the reflected shock wave in argon with a contact surface is discussed. The authors conclude that nonstationary propagation of a reflected shock wave is observed in argon when the degree of ionization of argon behind the reflected shock wave varies. Secondary effects of the interaction of the reflected wave in argon with the contact surface have been discovered. Ionization in cold hydrogen and helium near the reflection point of the shock wave and an increase in the degree of ionization at the end of the shock wave, related to the arrival of a second reflected wave, have been observed. Orig. art. has: 5 figures and 4 tables.
[GC]

SUB CODE: 20/ SUBM DATE: 31Feb66/ ORIG REF: 006/ OTH REF: 003/

Card 2/2

S/112/59/000/013/007/067
A002/A001

Translation from: Referativnyy zhurnal, Elektrotehnika, 1959, No. 13, p. 12,
26244

AUTHOR: Bazhenova, T. Yu., Korolev, V. N.

TITLE: On a Method of Estimating the Short-Time Electric Strength of
Nonuniform Dielectrics During Electric Aging

PERIODICAL: Tr. I-y Mezhvuzovsk. konferentsii po sovrem. tekhn. dielektrikov i
poluprovodnikov 1956g., Leningrad, 1957, pp. 144-148

TEXT: Rapid tests for selecting electrical insulation materials are usually not equivalent to real conditions, since they do not uncover the available reserve of electrical strength. However, they are applicable for comparing a new material or design with a material which has proven its efficiency during operation. During these tests, not only the methods are important, but also the method of estimating the results. For the possibility of estimating a reduction in the electric strength of compound insulation of electric machines, the authors suggest a method in which the introduction of an elementary aging system and a

Card 1/2

S/112/59/000/013/007/067
A002/A001

On a Method of Estimating the Short-Time Electric Strength of Nonuniform Dielectrics During Electric Aging

statistical processing of tests results are combined. During the aging of windings, specimens with a minimum short-time electric strength are punctured in the first place. It is assumed that the short-time strength of specimens punctured during aging by the moment of puncturing the specimens left over after aging, was lower than the strength of specimens sustaining the aging. This estimation is sufficient for plotting an integral curve of the distribution of the specimens after aging with an account of the punctured ones. A regularity was established in the aging of specimens having different initial short-time electric strengths. Results of statistical investigations of the probability of a puncturing from a number of tests are furnished. There are 2 references.

ASSOCIATION: Z-d "Elektrosila" imeni S. M. Kirova (Plant "Elektrosila" imeni S. M. Kirov)

Ye. N. P.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

BAZHENOVA, T. Yu.

Korolev, V.N. and Bazhenova, T.Yu. [Leningrad, Zavod "Elektrosila" imeni S.M. Kirova (Plant "Elektrosila" imeni S.M. Kirov)] 'The Electric Strength of Continuous Compounded Insulation and Its Decrease Under the Influence of High-voltage Industrial Frequency

(The Physics of Dielectrics; Transactions of the All-Union Conference on the Physics of Dielectrics) Moscow, Izd-vo AN SSSR, 1958. 245 p. 3,000 copies printed.

This volume publishes reports presented at the All-Union Conference on the Physics of Dielectrics, held in Dnepropetrovsk in August 1956, sponsored by the "Physics of Dielectrics" Laboratory of the Fizicheskii institut imeni Lebedeva AN SSSR (Physics Institute imeni Lebedev of the AS USSR), and the Electrophysics Department of the Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University).