"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P., kandidat tekhnicheskikh nauk; SIZOV, V.N., kandidat tekhnicheskikh nauk; AROBELIDZE, G.A., inzhener.

Building yards for the production of precast concrete construction elements. Stroi.prom. 33 no.1:22-26 Ja'55. (MLRA 8:3)

1. TSentral'nyy nauchno-issledovatel'skiy institut promyshlennykh sooruzheniy (for Arobelidze)
(Precast concrete construction)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P., kandidat tekhnicheskikh nauk.

Breakdown of the reinforced concrete shed roof of an industrial building. Stroi.prom. 35 no.2:21-26 F '57. (MLRA 10:3)
(Roofs, Concrete)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

SOV/97-58-10-15/17

AUTHORS: Vasil'yev, A.P. and Bulgakov, V.S. (Candidates of Technical Sciences), and Matkov, N.G. (Engineer)

TITLE: Injecting of Hollows in Precast Prestressed Reinforced Concrete Constructions (In"yektsiya kanalov v predvaritel'no napryazhennykh konstruktsiyakh)

PERIODICAL: Beton i zhelezobeton, 1958, Nr 10, pp 396-397 (USSR)

ABSTRACT: Tests were carried out in the Laboratory for Precast-Monolithic Reinforced Concrete of the Institute for Concrete and Reinforced Concrete (Laboratoriya sbornogo i sborno-monolitnogo zhelezobetona Instituta betona i zhelezobetona) ASiA SSSR on the injection of hollows of precast prestressed reinforced concrete constructions with cement and cement-sand grouts. The proper grouting of hollows has a considerable influence on the construction, otherwise corrosion of reinforcement is likely to occur, especially in the case of batch reinforcement (5 mm diameter) made from high-tensile steel. Also longitudinal cracks are likely to appear during freezing of the oozing out water). To achieve proper injecting of hollows the right composition of grout and correct mixing are necessary. Fig 1 shows a

Card 1/3

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SOV/97-58-10-15/17

Injecting of Hollows in Precast Prestressed Reinforced Concrete Constructions

special machine for the investigation of injection of hollows in prestressed constructions. Tests for compression, strength, hydration and shrinkage were carried out on hollows 30 m long filled in with 'pleksiglass' and concrete with inside batches of reinforcement. On the basis of these experiments it is recommended to use the following grouts (by weight): 1 : 0.35 and 1 : 0.4 (portland cement + water); 1 : 0.35 + plastifying additive (portland cement + water + 0.15% by weight of cement of residual distillate of sulphate-alcohol, or 0.1% soapnaphta); 1 : 0.25 : 0.45 (portland cement + ground sand or sand with grain up to 0.5 mm + water). These grouts have satisfactory "mobility", minimal hydration, small shrinkage, strength of not less than 200 kg/cm^2 after 7 days, satisfactory frost-resistance, and are suitable for injection into hollows 30 m or more long. The addition of plasticator makes the injection of grout much easier, and therefore

Card 2/3

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SOV/97-58-10-15/17

Injecting of Hollows in Precast Prestressed Reinforced Concrete Constructions

it is possible to reduce the pressure during injection. Fig 2 shows cross-section of grouted hollow with properly filled void.
There are 2 figures.

Card 3/3

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P., kand.tekhn.nauk; KROTOVSKIY, S.S., kand.tekhn.nauk.; CHINENKOV, Yu.V., kand.tekhn.nauk

Joints of stressed elements in prestressed concrete girders reinforced with wire bundles. Stroi. prom. 36 no.8:22-26 Ag '58. (MIRA 11:9)

(Girders)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

DAVYDOV, S.S.; VASIL'YEV, A.P.; SHISHKIN, R.G.

International Congress on Prestressed Reinforced Concrete. Prom. stroi. 36 no.12:36-43 D '58. (MIRA 12:1)
(Berlin--Prestressed concrete--Congresses)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

BERDICHEVSKIY, G.I., kand.tekhn.nauk; DMITRIYEV, S.A., kand.tekhn.nauk; MIKHAYLOV, K.V., kand.tekhn.nauk; GVOZDEV, A.A., prof., doktor tekhn.nauk; MIKHAYLOV, V.V., prof., doktor tekhn.nauk; BULGAKOV, V.S., kand.tekhn.nauk; VASIL'YEV, A.P., kand.tekhn.nauk; YEVGEN'YEV, I.Ye., kand.tekhn.nauk; MULIN, N.M., kand.tekhn.nauk; SVETOV, A.A., kand.tekhn.nauk; FRENKEL', I.M., kand.tekhn.nauk; BELOBROV, I.K., inzh.; MATKOV, N.G., inzh.; MITNIK, G.S., inzh.; SKLYAR, B.L., inzh.; SHILOV, Ye.V., inzh.; MASEHKO, I.D., inzh.; NIZHNICHENKO, I.P., inzh.; FILIPPOVA, G.P., inzh.; MIZERNYUK, B.N., kand.tekhn.nauk; SHEYNFEL'D, N.M., kand.tekhn.nauk; BALAT'YEV, P.K., kand.tekhn.nauk; BARBARASH, I.P., kand.tekhn.nauk; MITGARTS, L.B., kand.tekhn.nauk; SHIFRIN, M.A., kand.tekhn.nauk; PETROVA, V.V., red.izd-va; TEMKINA, Ye.L., tekhn.red.

[Temporary instruction on the technology of making prestressed reinforced concrete construction elements] Vremennaia instruktsiia po tekhnologii izgotovleniia predvaritel'no napriazhennykh zhelezobetonnykh konstruktsii. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1959. 255 p. (MIRA 12:12)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

BERDICHEVSKIY, G.I.---(continued) Card 2.

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut betona i zhelezobetona, Perovo. 2. Nauchno-issledovatel'skiy institut betona i zhelezobetona Akademii stroitel'stva i arkhitektury SSSR (for Gvozdev, V.V.Mikhaylov, Berdichevskiy, Bulgakov, Vasil'yev, Dmitriyev, Yevgen'yev, K.V.Mikhaylov, Mulin, Svetov, Frenkel', Belobrov, Matkov, Mitnik, Sklyar, Shilov). 3. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhpomoshchi Akademii stroitel'stva i arkhitektury SSSR (for Masenko, Nizhnichenko, Filippova, Mizernyuk, Sheynfel'd). 4. Nauchno-issledovatel'skiy institut Glavmospromstroymaterialov (for Balat'yev, Barbarash). 5. Nauchno-issledovatel'skiy institut po stroitel'stvu Minstroya RSFSR (for Mitgarts, Shifrin). 6. Deystvitel'nyye chleny Akademii stroitel'stva i arkhitektury SSSR (for Gvozdev, V.V.Mikhaylov).

(Prestressed concrete)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

AUTHOR: None given SOV/97-59-1-16/18

TITLE: Information from the Commission on Prestressed and Precast Reinforced Concrete Constructions (V Komissii po predvaritel'no napryazhennym i sbornym zhelezobetonnym konstruktsiyam)

PERIODICAL: Beton i Zhelezobeton, 1959, Nr 1, p 44 (USSR)

ABSTRACT: In December 1958 a session of the Commission on Prestressed and Precast Reinforced Concrete Construction was held in Moscow. This Commission was appointed by the Academy of Building and Architecture of USSR (Akademiya stroitel'stva i arkhitektury SSSR). The following papers were read:
Programmes and Planning for 1959/1965 - N.K. Proskuryakov, Director of the Department of Concrete and Reinforced Concrete Constructions of Gosstroy of USSR;
Report on the Commission's Activities in 1958 and Plans for 1959 - V.V. Mikhaylov and A.A. Gvozdev, Members of ASIA SSSR;
Reports on the Third International Congress on Prestressed Precast Reinforced Concrete - S.S. Davydov, Vice-President of ASIA SSSR; V.V. Mikhaylov, Member ASIA SSSR; and A.P. Vasil'ev and R.O. Shishkin, Candidates of Technical Sciences - on methods of designing and casting pretensioned reinforced concrete constructions.

Card 1/2

Card 2/2

2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P., kand.tekhn.nauk

Experimental testing of the tranverse strength of rigidly reinforced concrete elements subjected to bending. Trudy NIIZHB no.5:206-215 '59. (MIRA 12:9)
(Girders--Testing)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

SIZOV, Vasiliy Nikolayevich, prof., doktor tekhn.nauk; BESSER, Yakov Ruvimovich, kand.tekhn.nauk; VASIL'YEV, Aleksandr Petrovich, kand.tekhn.nauk; IL'INICH, Ivan Mikhaylovich, nauchnyy red.; NIKOLAYEVA, N.M., red.izd-va; OSENKO, L.M., tekhn.red.

[Making precast reinforced-concrete construction elements in construction yards] Izgotovlenie sbornykh zhelezobetonnykh konstruktsii na poligonakh. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 250 p. (MIRA 13:10)

(Precast concrete)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P. (Moskva); KOVAL'KOV, G.A. (Moskva)

Armored insulation. Izv. AN SSSR. Otd. tekh. nauk. Energ. i avtomat. no.1:160-162 Ja-F '60. (MIRA 13:2)
(Electric insulators and insulation) (Turbogenerators)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P., kand.tekhn.nauk; GUDENKO, N.G., inzh.

Sectional prestressed concrete trusses with a span of 27 m.
Trudy NIIZB no.16:65-86 '60. (MIRA 14:5)
(Prestressed concrete)
(Trusses)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P., kand.tekhn.nauk; GUDENKO, N.G., inzh.

Reinforced concrete prestressed girders made of linear elements for covering industrial buildings. Prom.stroi. 38 no.4:38-42 '60. (MIRA 13:8)
(Girders)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

FRIDKIN, A.Ya., inzh.; IL'IN, V.P.; VASIL'YEV, A.P., kand.tekhn.nauk

Large-span roofs made of precast reinforced concrete. Prom. stroi. 39 no.10:49-54 O '61. (MIRA 14:10)
(Roofing, Concrete) (Precast concrete construction)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A. P.

"The Erection of Prestressed Structures in Situ According to the Experience of the USSR."

report presented at the Intl. Congress on Prestressed Concrete, Rome/Naples, Italy 27 May - 2 June 1962.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P.

FRENKEL', I.M., kand. tekhn. nauk; MIRONOV, S.A., doktor tekhn. nauk, prof.; BARANOV, A.T., kand. tekhn. nauk; BUZHEVICH, G.A., kand. tekhn. nauk; MIKHAYLOV, K.V., kand. tekhn. nauk; MULIN, N.M., kand. tekhn. nauk; KHAYDUKOV, G.K., kand. tekhn. nauk; KORNEV, N.A., kand. tekhn.nauk; TESLER, P.A., kand. tekhn. nauk; HERDICHEVSKIY, G.I., kand. tekhn. nauk; VASIL'YEV, A.P., kand. tekhn. nauk; LYUDKOVSKIY, I.G., kand. tekhn. nauk; SVETOV, A.A., kand. tekhn. nauk; CHINENKOV, Yu.V., kand. tekhn. nauk; BELOBROVYY, .K., inzh.; KLEVTSOV, V.A., inzh.; DOBROMYSLOV, N.S., arkh.; DESOV, A.Ye., doktor tekhn. nauk, prof.; LITVER, S.L., kand. tekhn. nauk; PISHCHIK, M.A., inzh.; SKLYAR, B L., inzh.; POPOV, A.P., kand. tekhn. nauk; NEKRASOV, K.D., doktor tekhn. nauk, prof.; MILOVANOV, A.F., kand. tekhn. nauk; TAL', K.E., kand. tekhn. nauk; KALATUROV, B.A., kand. tekhn. nauk; KARTASHOV, K.N., red.; MAKARICHEV, V.V., kand. tekhn. nauk, red.; YAKUSHEV, A.A., inzh., nauchnyy red.; BEGA, B.A., red. izd-va; NAUMOVA, G.D., tekhn. red.

[Reinforced concrete products; present state and prospects for development]Zhelezobetonnye konstruktsii; sostoianie i perspektivy razvitiia. Pod obshchei red. K.N.Kartashova i V.V.Makaricheva. Moskva, Gosstroiizdat, 1962. 279 p. (MIRA 15:8)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

FRENKEL',I.M.---(continued) Card 2.

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut betona i zhelezobetona, Perovo. 2. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Kartashov). 3. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Mironov). 4. Gosudarstvennyy institut tipovogo proyektirovaniya i tekhnicheskikh issledovaniy (for Berdichevskiy, Vasil'yev, Lyudkovskiy, Svetov, Chinenkov, Belobrovyy, Klevtsov, Dobromyslov). 4. Vsesoyuznyy gosudarstvennyy proyektno-konstruktorskiy institut (for Desov, Litver, Pishchik).

(Precast concrete)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

MATKOV, N.G., inzh.; VASIL'YEV, A.P., kand. tekhn. nauk;
BULGAKOV, V.S., kand. tekhn.nauk, red.

[Experimental study of the freezing of injection mortars and their adhesion to reinforcement in ducts of prestressed reinforced concrete elements] Eksperimental'noe issledovanie zamorazhivaniia in"ektsionnykh rastvorov i ikh stsepleniia s armaturoi v kanalakh predvaritel'no napriazhennykh zhelezobetonnykh konstruktsii. Moskva, Nauchno-issl. in-t betona i zhelezobetona, 1963. 36 p. (MIRA 17:9)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P., kand.tekhn.nauk; BULGAKOV, V.S., kand.tekhn.nauk; MATKOV, N.G., kand.tekhn.nauk

Quality grouting of precast prestressed concrete elements. Bet. i zhel.-bet. 9 no.2:53-59 F '63. (MIRA 16:5)
(Prestressed concrete)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P., kand. tekhn. nauk; MATKOV, N.G., kand. tekhn. nauk

Grouting of prestressed concrete structures in winter by electric heating of cables. Bet. i zhel.-bet. 9 no.11:502-508 N '63. (MIRA 17:1)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P., doktor tekhn. nauk; BULGAKOV, V.S., kand. tekhn. nauk; MATKOV, N.G., kand. tekhn. nauk

[Grouting of ducts of prestressed concrete elements] In"etsirovanie kanalov predvaritel'no napriazhennykh zhelezobetonnykh konstruktsii. Moskva, Stroiizdat, 1964. 245 p. (MIRA 18:3)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

L 00742-66 EWT(m)/EWP(t)/EWP(b) IJP(c) GS

ACCESSION NR: AT5020468 UR/0000/64/000/000/0219/0232 41 37 Bt1

AUTHOR: Vyatkin, A. P.; Vasil'yev, A. P.

TITLE: Some anisotropic properties of gallium arsenide and their effect on the geometry of alloyed contacts

SOURCE: Mezhvuzovskaya nauchno-tekhnicheskaya konferentsiya po fizike poluprovodnikov (poverkhnostnyye i kontaktnyye yavleniya). Tomsk, 1962. Poverkhnostnyye i kontaktnyye yavleniya v poluprovodnikakh (Surface and contact phenomena in semiconductors). Tomsk, Izd-vo Tomskogo univ., 1964, 219-232

TOPIC TAGS: gallium arsenide, semiconducting material, crystal anisotropy, crystallography

ABSTRACT: The authors study the alloying process and the kinetics of the formation of fused contacts of gallium arsenide with a metal with respect to the crystallographic orientation of the semiconductor surface. The metal used was tin, a donor impurity with respect to gallium arsenide. It is shown that light figures may be used for crystallographic orientation of gallium arsenide crystals and for delimination of (111) surfaces bounded by atoms of gallium and arsenic. The dissolution of gallium arsenide in molten tin is studied as a function of crystallographic

Card 1/2

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L 00742-66

ACCESSION NR: AT5020468

orientation, temperature of the solvent and concentration of the gallium arsenide in solution. It is established that the rate of dissolution along the principal crystallographic axes takes the following sequence

$$v[111] > v[100] > v[110] > v[111],$$

Thus the process of gallium arsenide dissolution in tin is anisotropic in nature. The geometry of fused contacts of tin with gallium arsenide is studied in various crystallographic planes. It is shown that the flattest junctions are formed when the metal is fused in plane (111). Data on the electrical properties of the contacts were obtained by measuring the potential distribution in a contact-semiconductor-contact system. It was found that alloyed contacts of tin with *n*-gallium arsenide are ohmic. Tin forms a rectifying junction with *p*-type gallium arsenide. The experimental results agree with those of other authors. "We thank V. A. Presnov for interest in the work and consultation, and A. P. Izergin and S. S. Khludkov for furnishing the material." Orig. art. has: 12 figures, 4 tables.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut (Siberian Physicotechnical Institute)

SUBMITTED: 06Oct64 ENCL: 00 SUB CODE: SS

NO REF SOV: 010 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

GOTSERIDZE, G.G.; VASIL'YEV, A.P.; MIKHAYLOV, V.V.; PEREL'SHTEYN, N.L. [deceased]; [illegible], R.G.; YAKUBOVSKIY, B.V.; MITNIK, G.S., kand. tekhn. nauk, nauchn. red.; [illegible], M.N., red.

[Prestressed reinforced concrete; based on materials at the Fourth International Congress on Prestressed Reinforced Concrete Structures held at Rome and [illegible] in 19[illegible] [illegible] varitel'no [illegible] priazhennyi zhelezobeton; po materialam IV Mezhdunarodnogo kongressa po preovaritel'no napriazhennym zhelezobetonnym konstruktsiiam (FIP), Rim-Neapol', 1962 g. Moskva, Stroiizdat, 1964. 281 p. (MIRA 17:10)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

BERDICHEVSKIY, G.I., doktor tekhn. nauk; VASIL'YEV, A.P., doktor tekhn. nauk

Problems in improving the strength of concrete and steel in reinforced concrete structures. Prom. stroi. 41 no.8:8-10 Ag '64. (MIRA 17:11)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

L 2717-66 EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/JG

ACCESSION NR: AP5017186 UR/0139/65/000/003/0152/0153

AUTHOR: Vasil'yev, A. P.; Vyatkin, A. P.

TITLE: Diagram of state of gallium arsenide--tin system

SOURCE: IVUZ. Fizika, no. 3, 1965, 152-153

TOPIC TAGS: gallium arsenide, tin containing alloy, alloy phase diagram, solubility

ABSTRACT: This is a continuation of another study by the authors (Voprosy radioelektroniki, seriya II, in press) devoted to the rules governing the formation of alloyed contacts between gallium arsenide and tin. Using the data obtained in that study on the solubility of the semiconductor in the metal, the authors derive an approximate state diagram for the GaAs-Sn system. These results are of interest because a direct construction of the diagram from cooling data is made difficult by the irreversible decomposition of the gallium arsenide and by the high vapor tension of the arsenic over this compound. The temperature at which the liquid phase appears in the GaAs-Sn system lies in the interval 210--225C, which is somewhat lower than the melting point of pure tin, thus confirming the existence of a eutectic alloy on the tin side. The solubility of GaAs in tin is quite low until 400C is reached. The solubility of tin in GaAs is judged to be not higher than 1%.

Card 1/2

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L 2717-66

ACCESSION NR: AP5017186

Extrapolation of the data to low temperatures yields a tin concentration of 10^{-2}%. "We thank L. G. Lavrent'yeva and A. P. Izergin for valuable remarks in the discussion of the work." Orig. art. has: 3 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut imeni V. D. Kuznetsova (Siberian Physicotechnical Institute)

SUBMITTED: 23Apr64 ENCL: 00 SUB CODE: SS

NR REF SOV: 002 OTHER: 002

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P.

Microflora of fermenting beet juices from a Soviet beet-sugar factory. A. I. Rokitzkaya and A. P. Vasil'ev. *Nauk. Zapiski Tsukrovoi Prom.* 26, 59-66(1932).—Two samples of decompg. beet juice were tested to det. the bacteria content, microflora and antiseptics which would prevent decompn. Most of the bacteria decompd. the sucrose with formation of acid + gas or only acid. These bacteria belong to 3 groups: strong aerobes, facultative anaerobes and thermophilic. Sepd. cultures were very resistant to temp. and disinfecting agents as SO_2, formalin and milk of lime. Formalin delayed the growth of cultures for about 4 days. R. and V. describe the detailed method of testing and results obtained.

V. E. Baikow

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P.

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12

The postmortem infection of meat by microbes of the paratyphus group. S. N. Ruchkovskii, A. P. Vasil'ev and I. I. Cherepin. *Voprosy Pitaniya* 5, No. 5, 127-30 (1936). A method for accelerating the study of meat and meat products for paratyphus bacteria by the method of Kazakov. M. A. Sviderskaya. *Ibid.* 123-9 (1936). Rate of death of bacteria during the thermal culinary treatment of food products. B. S. Aleev. *Ibid.* 155-8.

F. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A. P.

PROCESSES AND PROPERTIES INDEX

Biochemical properties of the acetic acid bacteria of the group of quick-vinegar bacteria. A. P. Vasil'ev and I. M. Shaim'ka. *Mikrobiol. Zhur.* 5, No. 3, 63-71(1938); *Khim. Referat. Zhur.* 2, No. 4, 65(1939).—The assimilation of N and C from different sources by the following acetic acid bacteria of the quick-vinegar bacterial group was investigated: *Bacterium schützenbachii* (9 strains), *B. orleanense* (16 strains) and *B. curvum* (4 strains). The bacteria were taken from the Kiev vinegar works and raised on synthetic media of Simons-Drobot'ko (sources of C 1.0 g., N 1.0 g., K_2HPO_4 1.0 g., $MgSO_4$ 0.2 g., NaCl 5.0 g., distd. water 1.0 l., and washed agar agar 20.0 g.) in which the sources of C and N were varied. The degree of assimilation was detd. by the intensity of the growth of the bacteria. The sources of N (with glucose as the source of C) can be given in the following order according to their degree of assimilation of N: asparagine, NH_4NO_3, urea and KNO_3 (for *B. schützenbachii* only KNO_3 is a better source of N than NH_4). Urea is clearly unsuitable as a source of N. The following substances were investigated as sources of C: Na citrate, Na lactate, Na succinate, Na acetate, EtOH and glycerol. The sources of N were the same substances as in the previous expt. Best results were obtained with Na lactate and Na succinate, and worst results with Na acetate, EtOH and glycerol. The relation between the sources of N and C can be given as follows. The *B. curvum* medium with Na acetate and urea was not assimilated by any of the strains while the media with Na acetate and NH_4 N were assimilated by all strains. The results obtained show that the strains of the same kind can differ greatly according to their biochem. properties, and that the strains of different kinds can be similar according to their physiol. properties. These facts create doubts as to the existence of the types *B. schützenbachii*, *B. orleanense* and *B. curvum* as sep. classified substances. W. R. Henn

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASILYEV, A. P.

ROZHDESTVENSKIY, V. S., and VASILYEV, A. P. Atlas of Bacteria, Publishing House of the Academy of Science URSE, Kiev, 1940, 172 pp. 44.8 R81

SO: SIRA SI 90-53, 15 Dec. 1953

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASILYEV, A.P.

USSR/Microbiology. General Microbiology. F-1

Abs Jour: Ref. Zhur-Biol., No 7, 1958, 28812.

Author : Vasilev, A.P.
Inst : Not given.
Title : Solid Lactate-Sulfate Medium for Rapid Growth of Bac. Perfringens.

Orig Pub: Plotnaya molochno-sulfitnaya sreda dlya uskorennogo vyrashchivaniya Bac. perfringens. Tr. Mosk. vet. akad., 1956, 12, 187-191.

Abstract: No abstract.

12

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APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A. P.

"Investigation of the Operation of Straw Presses With Rocking Piston."
Thesis for degree of Cand. Technical Sci. Sub 8 Jun 49, Moscow Inst for the Mechanization and Electrification of Agriculture imeni V. M. Molotov.

Cand Tech Sci

Summary 82, 18 Dec 52, Dissertations Presented For Degrees in Science and Engineering in Moscow in 1949. From Vechernyaya Moskva, Jan-Dec 1949.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'IEV, A.P., dotsent, kandidat tekhnicheskikh nauk

Reasons for the effectiveness of thermal piercing of boreholes with the use of a rocket-type burner. Gor.zhur. no.8:24-31 Ag '55. (MLRA 8:8)
(Boring)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P., dotsent, kandidat tekhnicheskikh nauk; IVANOV, K.I., kandidat tekhnicheskikh nauk; LYGALOV, V.V., inzhener; FEDOSOV, A.A., inzhener.

Study of thermal piercing in mines. Gor. zhur. no.7:52-56 Jl '56. (MLRA 9:9)

(Boring)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P.; IVANOV, K.I.; DUSHUTIN, L.S.; NOVOSEL'SKIY, Yu.A.

Study of rock breaking in thermal drilling. Vzryv. delo no.46/3: 79-97 '61. (MIRA 15:1)

(Boring)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

YAGUPOV, Aleksandr Vasil'yevich; POKROVSKIY, Mikhail Aleksandrovich; VASIL'YEV, Anatoliy Pavlovich; VARICH, Mikhail Sidorovich; LYUBIMOV, N.G., otv. red.; OVSEYENKO, V.G., tekhn. red.

[Jet piercing of blast holes] Ognevoe burenie vzryvnykh skvazhin. [By] A.V.IAgupov, i dr. Moskva, Gosgortekhizdat, 1962. 199 p. (MIRA 15:7)

(Boring)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

ACC NR: AP6034752 SOURCE CODE: UR/0020/66/170/005/1044/1047

AUTHOR: Vasil'yev, A. P.; Kogan, V. I.

ORG: none

TITLE: Contribution to the theory of radiation transport in plasma

SOURCE: AN SSSR. Doklady, v. 170, no. 5, 1966, 1044-1047

TOPIC TAGS: transport equation, radiation energy, integral equation, approximation method, plasma radiation

ABSTRACT: The authors discuss difficulties involved in solving the radiation-transport equation, connected primarily with the fact that the kernel of the integral equation for the transport of resonant radiation does not decrease sufficiently rapidly with distance, making this equation irreducible to a differential form. Physically this makes the radiation-transport equations different from diffusion equations and impossible to solve by a diffusion approximation. It is shown that this is not always the case, and that the total frequency redistribution occurring during the re-radiation act does not by itself lead to the non-diffuse nature of the radiation-transport process. The analysis is carried out for ionization equilibrium between an impurity in a plasma of finite dimensions, using a simple model of a hydrogen-like atoms whose electron can be either at a single discrete level or in a continuous spectrum. It is further postulated that in all types of radiation the transport is accompanied by complete redistribution of the frequencies during the re-radiation act. The causes of

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ACC NR: AP6034752

the slow decrease of the kernel of the integral equation are then analyzed and it is concluded that the slow variation of the kernel is not always an obstacle to a solution of the problem, since the ionization-equilibrium equation can be reduced to a balance equation for the number of excited atoms in the two-level model, and the balance equation can in turn be reduced to an asymptotic form that admits of solution in the diffusion approximation. The authors thank V. A. Abramov and A. N. Lagar'kov for a discussion of the results. This report was presented by Academician M. A. Leontovich 29 April 1966. Orig. art. has: 11 formulas.

SUB CODE: 20/ SUBM DATE: 06Apr66/ ORIG REF: 009/ OTH REF: 002

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P.; VYATKIN, A.F.

Diagram of state for the system gallium arsenide - tin. Izv. vys. uchebn. zav.; fiz. 8 no.3:152-153 '65. (MIRA 18:9)

1. Sibirskiy fiziko-tekhnicheskiy institut imeni V.D.Kuznetsova.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.P., kand.tekhn.nauk

Take into account the characteristics of motor vehicle traffic on additional ascending lanes. Avt.dor. 28 no.10:9-10 O '65. (MIRA 18:11)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

S/138/59/000/011/006/011
A051/A029

AUTHORS: Bebris, K. D.; Vasil'yev, A. R.; Veresotskaya, N. V.; Novikov, M. I.

TITLE: On the Production of Rubber Mixtures in Rubber Mixers Using an Elevated Power Input

PERIODICAL: Kauchuk i Rezina, 1959, No. 11, pp. 27-34.

TEXT: The mixing conditions of rubber mixtures and the methods of increasing their productivity were studied on a usual РС-2 (RS-2) mixer. The investigations were based on experience obtained at various Soviet Tire Plants and on general world practice of using the method of elevated pressure at the upper lock and increased rotation of the rotors (Ref. 1). It was found that the intensification of the mixing process could be accomplished by increasing the volume of the filling mixture by loading all the materials into the mixer at the beginning of the cycle and by increasing the pressure of the upper lock, i.e., by the production of the mixtures using an elevated power input. The order in which the material is fed to the mixer also has an effect on the increased pressure of the upper lock. Fig.1 is a diagram showing the input power used in the production of tread rubber based on СКС-30АМ (SKS-30 AM) with 30 weight

Card 1/4

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

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A051/A029

On the Production of Rubber Mixtures in Rubber Mixers Using an Elevated Power Input

parts of furnace and 30 weight parts of channel carbon black. Table 1 shows the energy consumption and the input power used in the production of the mixtures in addition to the physico-mechanical indices of the corresponding rubbers. It is concluded that the mixing intensity is directly proportional to the input power. The specific energy consumption during the mixing process of mixtures of the same compositions at elevated power input and correct mixing conditions is approximately the same as for ordinary conditions. The general criterion for evaluating the mixing intensity is the input power, and for the mixing duration the energy consumption at given conditions. In producing a mixture with a hardness of 500-800 g, according to Defoe, a specific pressure at the upper lock of 1.2 kg/cm^2 was found to be adequate, corresponding to the highest values of the input power and the consumption of energy per unit of time. The value of 1.2 kg/cm^2 was accepted as the optimum specific pressure. The replacement of the upper cylinders having a diameter of 203 mm by those having a diameter of 407-410 mm at tire plants in the Soviet Union is unjustified, since the mixtures manufactured in the Soviet Union are not as hard as those manufactured

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

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A051/A029

On the Production of Rubber Mixtures in Rubber Mixers Using an Elevated Power Input

abroad, which have a hardness of 1,200-1,500 g. The clearance between the rotor comb and the wall of the mixing apparatus has a direct bearing on the intensity of the mixing process, the optimum value being 4.5 mm, at a charge of 158 liters or a 62.5%-filling of the mixing apparatus. Research carried out at the NIIShP and various tire plants resulted in an increase in this volume to 155-164 l for casing mixtures and 150-155 l for tread mixtures, depending on the mixing temperature and the distribution of the ingredients in the mixture, and also on the clearance between the rotary combs and the walls of the mixer. It is pointed out that feeding the carbon black into the mixer after the other ingredients can decrease or eliminate the effect of the increased pressure at the upper lock on the mixing procedure. It is recommended that first the furnace carbon black be introduced, then liquid softeners, then the finely-ground ingredients, the rubber, and finally the channel carbon black. A reverse sequence is recommended when producing mixtures containing lump-forming carbon blacks, such as channel carbon black and anthracene. When loading all the ingredients into the mixer at the beginning of the cycle and at an elevated pressure of

Card 3/4

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A051/A029

On the Production of Rubber Mixtures in Rubber Mixers Using an Elevated Power Input

the upper lock the optimum duration period is 5.0-6.5 min. (depending on the composition of the mixture). The following characteristic features of mixing in the RS-2 mixer were established: 1) The mixture temperature during the mixing process increases proportionately to the energy consumed in the mixing. 2) The compression system of the rotors should be improved to eliminate an increase in extruded parts and dusting. 3) In applying an elevated power input to the RS-2 mixer, the loading apparatus can be subjected to vibrations, leading to a loosening of various parts, such as the loading funnel and cylinders. It is suggested that these defects be eliminated by close observations. Producing rubber mixtures at an elevated power input decreases the mixing time and improves the quality of the mixture at the same time. There are 4 sets of diagrams, 6 tables and 5 references: 2 Soviet, 3 English.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

Card 4/4

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

ARSLANOVA, A.Kh.; BELYAKOV, V.D.; BERGER, B.I.; VASIL'YEV, A.S.; GAVRILOV, N.A.; GEL'MAN, L.I.; KALUGIN, V.P.; KOROSTELEV, V.Ye.; KRAMER, I.I.; MIKHAYLOVSKIY, V.T.; ROGOZIN, I.I.; SEREBRYAKOV, L.V.

Combined vaccination with chemical and living vaccines. Voen.-med. zhur. no. 1:78-80 Ja '60. (MIRA 14:2)
(VACCINATION)

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BAYKOV, B.K.; MELKHINA, V.P.; Prinimali uchastiye: VASIL'YEV, A.S.; KATSENELENBAUM, M.S.; KOMAROVA, A.A.; ZHIGULINA, L.A.; TERNOVSKAYA, L.N.; YUSHKO, Ya.K.; CHUMAK, K.I.; GUSEL'NIKOVA, E.L.; KETOVA, O.N.

Hygienic characteristics of air pollution in Gubakha and its effect on health of the population. Uch. zap. Mosk. nauch.-issl. inst. san. i gig. no.6:21-25 '60. (MIRA 14:11)
(NIZHNYAYA GUBAKHA—AIR—POLLUTION)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

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VYALOV, A.M.; BAGNOVA, M.D.; VASIL'YEV, A.S.; PUSHKINA, N.N.; YUSHKEVICH, L.B.; BULYCHEV, G.V.; BYLOV, I.S.; GENKIN, A.G.; ZHIDKOVA, L.V.; ZHIGULINA, L.A.

Early changes in the state of health of workers in the cumene process of phenol and acetone production. Uch. zap. Mosk.nauch.-issl. inst.san. i gig. no.9:13-16 '61 (MIRA 16:11)

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APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

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YEFIMOV,N.A.; VASIL'YEV,A.S.; YUSHKO,Ya.K.; KOMAROVA, A.A.; KUBLANOVA,P.S.; ZHIGULINA, L.A.; YUSHKEVICH, L.B.; BULYCHEV, G.V.

Effect of wastes of a metallurgical plant on the health of the population. Uch.zap. Mosk. nauch.-issl.inst. san. i gig. no.9:73-76 '61 (MIRA 16:11)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

BAGNOVA, M.D., nauchnyy sotr.; VASIL'YEV, A.S., nauchnyy sotr.; GEYZER, I.M., nauchnyy sotr.; YEFIMOV, N.A., nauchnyy sotr.; LUK'YANOV, V.S., nauchnyy sotr.; PANKOVA, V.M., red.; KOROBOVA, N.D., tekhn. red.

[Living and health]Byt i zdorov'e. Moskva, Profizdat, 1962. 149 p. (MIRA 15:9)

1. Moskovskiy nauchno-issledovatel'skiy institut gigiyeny im. F.F.Erismana (for all except Pankova, Korobova).
(HYGIENE)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASILYEV, A.

EXCERPTA MEDICA Sec.4 Vol.11/4 Med.Microb. etc. April58

1092. CHANGE OF STABILITY OF THE PROTEIN SYSTEM IN THE BLOOD DURING INJECTION OF HETEROGENIC BLOOD ERYTHROCYTES AND THEIR STROMA IN ANIMALS (Russian text) - Vasilev A.S. and Suzdaleva

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

1072

V. Centr. Inst. of Haematol. and Blood Transf., Moscow - PROBL. GEMATOL. PEREL. KROVI 1956, 1/2 (34-39) Tables 3

Two series of experiments were carried out on 40 dogs. Injection of heterogenic blood (1 ml./kg.) to the animal, thereby inducing shock, led to changes in the blood protein system. These changes, generally characterized by loss of protein lability, depend on the severity of the state of shock: the more violent the reaction of the animal the more sharply pronounced was the stabilization of the protein system (increased clotting time, increased stability to alcohol, decreased viscosity). Injection of the stroma of heterogenic erythrocytes in the same quantity as the heterogenic blood caused shock in the majority of the experiments, but in less severe degree than that seen on injection of heterogenic blood. In both cases the loss of lability of the protein system in the blood serum of the recipient animal was demonstrable. The changes in the protein characteristics during shock induced by injection of heterogenic stroma were more definite and were more uniform than those occurring during the shock induced by the injection of heterogenic blood. This phenomenon is to be explained by the absence of haemolysis when stroma is injected. References 1.

Krymskii - Moscow (S)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

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GVOZDEV, V.D.; SAL'NIKOV, A.A.; FOMICHEV, A.G.; TIKHONOV, V.A.; VASIL'YEV, A.S.

Design and construction of apparatus with a fluidized bed of grainy material. Part 1: Gas distribution grids. Izv.vys.ucheb.zav.;khim. i khim.tekh. 6 no.2:320-327 '63. (MIRA 16:9)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra khimicheskogo mashinostroyeniya.

(Fluidization)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

YAGODIN, V.P., inzhener-polkovnik; VASIL'YEV, A.S., podpolkovnik

Prospects for the development of communications technic (as revealed by foreign press data). Vest. protivovozd. obor. no.6:56-62 Je '61. (MIRA 14:8)

(Radio)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

PHASE I BOOK EXPLOITATION SOV/5693

Vasil'yev, Aleksandr Sergeyevich, and Aleksandr Yevgen'yevich Slukhotskiy

Ionnyye i elektronnyye inveitory vysokoy chastoty (Gas-Filled and Vacuum-Tube High Frequency Inverters) Moscow, Gosenergoizdat, 1961. 177 p. 6,500 copies printed.

Ed.: A. V. Bamuner; Tech. Ed.: Ye. M. Soboleva.

PURPOSE: This book is intended for scientific and technical personnel and for students in schools of higher education.

COVERAGE: The book gives an analysis of vaccuum- and gas-filled tube inverters operating under stationary and transient conditions. The designing of basic units operating at elevated frequencies is examined and the circuits of vacuum- and gas-filled tube inverters used for the power supply of induction heating and ultrasound installations are reviewed. The book is largely based on the results of the authors' investigations at NII TVCh

Card 1/5

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

(Nauchno-issledovatel'skiy institut tokov vysokoy chastoty imeni Prof. V. P. Vologdina - - Scientific Research Institute of High-Frequency Currents imeni Prof. V. P. Vologdin) and at the Leningradskiy elektrotekhnicheskiy institut imeni V. I. Ul'yanova (Lenina) Leningrad Electrotechnical Institute imeni V. I. Ul'yanov (Lenin). A. V. Bamuner and V. M. Martsinovich, Engineers, members of NII TVCh, participated in the work. Chs. I and II, Sec. 20 of Ch. IV and Sec. 21-24 of Ch. V were written by A. Ye. Slukhotskiy; Ch. III, Sec. 17-19 of Ch. IV, and Sec. 25-27 of Ch. IV, and Sec. 25-27 of Ch. V by A. S. Vasil'yev. There are 19 references: 14 Soviet, 3 German, and 2 French.

TABLE OF CONTENTS:

Introduction 5

Ch. I. Fundamentals of the Theory of the Parallel Gas-Filled Tube Inverter 7

1. Principle of operation 7

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, Aleksandr Sergeyevich; SERGEYEV, V.M., inzh., red.; SMIRNOVA, G.V., tekhn. red.

[Reference tables for the elements of the circle] Spravochnye tablitsy elementov kruga. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 400 p. (MIRA 14:11)
(Geometry, Plane—Tables, etc.)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

IZMAYLOV, N.A.; VASIL'YEV, A.S.

Study of a glass electrode with the aid of radioactive indicators. Zhur.fiz.khim.29 no.10:1866-1875 O '55. (MLRA 9:4)

1.Khar'kovskiy gosudarstvennyy universitet imeni A.M.Gor'kogo.
(Electrodes, Glass) (Isotopes)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.S., dotsent

All-union scientific and technical conference on industrial application of high-frequency currents. Izv. vys. ucheb. zav.; radiotekh. no.3:383-384 My-Je '58. (MIRA 11:7)
(Electrification--Congresses)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

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A052/A001

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1959, No. 14, p. 7, # 28556

AUTHOR: Vasil'yev, A. S.

TITLE: An Analysis of Transient Processes in the Ionic Converter Circuit

PERIODICAL: Izv. Leningr. elektrotekhn. in-ta, 1958, No. 35, pp. 118-135

TEXT: In the proposed calculation method of the transient process the relation between the current in the choke (or the voltage on the capacitor) at the beginning and the end of some one-half period (say the (n + 1)th) is sought for. Having a formula connecting i_{n+1} with i, equations can be written in the form of finite differences from which the sought for value is determined for any one-half period, including a steady state at $n \to \infty$. Cases of an aperiodic and oscillating tuning of the circuit are considered, examples are cited. It is pointed out that the method can be applied to any circuit with commutating devices of periodic action. A. S. R.

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

Card 1/1

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VASIL'YEV, A.S.

USSR/Forestry - Forest Cultures. K-4

Abs Jour : Ref Zhur - Biol., No 20, 1958, 91551

Author : Sedasheva, G.Ya., Vasil'yev, A.S.
Inst : -
Title : The Smoke Tree (Cotinus cogyggria) in Bashkiria.

Orig Pub : Tr. Bashkirsk. s-kh. in-ta, 1956, 7, 301-303.

Abstract : At the Ufimskiy Botanical Garden and the Bashkirian Experimental Forestry Station, rows of smoke trees were planted in 1940. They withstood the severe winters quite well at temperatures down to -40° and only individual bushes showed damage to last year's shoots; the smoke trees also survived well through the hot, arid summer of 1953. Two years old smoke trees, cultivated from seeds, attain an average height of 45.2 cm and a trunk diameter of 0.6 - 0.8 cm. The installation of production plantations of two years old seedlings, cultivated from local seeds, is recommended for the Ural Forelands of Bashkiria.

Card 1/1

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SOV/109-4-1-9/30

AUTHORS: Slukhotskiy, A.Ye., Vasil'yev, A.S. and Martsinovich, V.M.

TITLE: Analysis of the Operation of a Series-type Thyratron Converter (Analiz raboty posledovatel'nogo ionnogo preobrazovatelya)

PERIODICAL: Radiotekhnika i Elektronika, 1959, Vol 4, Nr 1, pp 63 - 69 (USSR)

ABSTRACT: The principles of the operation of a series-type converter is known (Ref 1). Two series converter circuits are shown in Figures 1 and 2. The circuit of Figure 1 employs two thyratrons but is asymmetrical. The circuit of Figure 2 is a push-pull arrangement. The operation of the two circuits is similar and can be analysed in the same manner, provided it is assumed that the capacitances C_1 and C_2 of the circuit of Figure 2 are each equal to half the total capacitance of the circuit of Figure 1. The operation of the circuit of Figure 2 is as follows. During the half-period, when the tube 1 is open, the capacitor C_2 is charged through the network RL_1 and the capacitor C_1 is charged through this network. During the succeeding

Card1/4

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half-period, the tube 2 is ignited and the capacitor C_2 is discharged, while C_1 is discharged through RL_2. The condition necessary for the operation of the system is that the voltage at the choke, at the instant of the ignition of a tube, should be higher than the supply voltage E. The equivalent circuit of the converter of Figure 2 can be represented on a network consisting of L, RC and four switches (see Figure 3). During one of the half-periods, the switches 1-2 of Figure 3 are closed while the switches 3-4 are opened and the current flows in the direction indicated by the arrow in Figure 3. During the next half-period, the contacts 3-4 are closed and the contacts 1-2 are open so that the current flows in the opposite direction. The current in the choke has always the same direction. For the purpose of analysis, it is assumed that the voltage applied to the equivalent circuit is equal to half the source voltage. For each half-period of the supply voltage, the operation of the system can be described by:

$$\frac{1}{2} E = L \frac{di}{dt} + iR + \frac{1}{C} \int idt \qquad (1) .$$

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If the notation defined by Eq (2) is adopted, Eq (1) can be written in the form of Eq (5). If it is assumed that the network of Figure 3 operates in the oscillatory regime, the solution of Eq (5) is written as:

$$i' = Be^{-\frac{R}{2L}t} \sin(\omega_o t + \varphi) \qquad (6)$$

where ω_o is the natural frequency of the network, while the constants B and φ can be determined from the initial conditions. If it is assumed that $\omega_o/\omega = n'$, where ω is the frequency of the supply voltage, the initial conditions for the resistor current and for the voltage across the condenser can be written as Eqs (14) and (15), respectively. T in these equations denotes the period of the supply-voltage frequency. From these initial conditions, it follows that φ can be expressed by Eq (17), while B is given by Eq (19) where $k = RT/8L$. The effective normalised current or the voltage across the resistance is, therefore, expressed by Eq (24), while the

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SOV/109-4-1-9/30

Analysis of the Operation of a Series-type Thyratron Converter

maximum inverse voltage of the system is expressed by Eq (30). The so-called closing time of the system can be found from Eq (32), where u_L denotes the voltage across the choke; the closing time is defined as the interval between the inception of the switching and the instant when the voltage at the choke becomes equal to the supply voltage. Eq (32) can also be written as Eq (34). The above formulae were used to construct a number of graphs. These are shown in Figures 6, 7, 8. Figure 6 represents the voltage across the resistance as a function of k, Figure 7 shows the closing time characteristics in terms of k, while Figure 8 gives the values of the maximum inverse voltage as a function of k. Some experimental measurements were carried out and it was found that the discrepancies between the measured values and the results calculated by means of the formulae were less than 10%. There are 8 figures and 2 references, 1 of which is Soviet and 1 German.

SUBMITTED: April 15, 1957

Card4/4

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.S., podpolkovnik

Amplifier and transformer for telephone switchboards. Vest. protivovozd.obor. no.1:62-63 Ja '61. (MIRA 14:2)
(Telephone switchboards)

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CA

VASIL'YEV, A.S.

2

PROCESSES AND PROPERTIES INDEX

Swelling of sand. A. S. Vasil'yev. *Colloid J.* (U. S. S. R.) 1, 151-9(1935).—After treatment by acids and washing, SiO_2 sand has an activated surface and adsorbs $Ca(OH)_2$ from satd. solns. according to the adsorption laws. Desorption shows hysteresis. On gradually increasing the $Ca(OH)_2$ concn. from small values a hydration of the active SiO_2 layers takes place. Further increase of $Ca(OH)_2$ concn. leads to further hydration and gel formation with a cementing together of the sand particles. F. H. Rathmann

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PROCESSES AND PROPERTIES INDEX

New colorimetric method for detecting nitric acid. A. K. Yasil'ev. *J. Applied Chem.* (U. S. S. R.) 9, 1850 (1936).—Add to 2 drops of *N* nitrate soln. 3 drops of 0.1% soln. of *β*-methyl-umbelliferone in concd. H_2SO_4. NO_2, which is evolved, forms with *β*-methyl-umbelliferone a yellow cryst. compd. which is sol. in water. Neutralize the acid soln. with NH_3. The greenish lemon-yellow color of the liquid changes to dark straw-yellow. Dilute to 2 l. with water. Color changes to lemon-yellow. Dilu. with water is necessary as the reagent forms colored compds. with other substances (such as $KClO_3$) which may be present in the soln. and obscure the reaction in concd. soln. The reaction is sensitive for both HNO_3 and HNO_2. For their sep. detn. add 0.1% soln. of *β*-methyl-umbelliferone in EtOH soln. directly to the soln. of nitrates and nitrites. Then add concd. H_2SO_4. Nitrates only will respond to the reaction. V. A. Kolchevski.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

A. C. S.

Cements

Rapid method for determining moisture in gypsum products. A. S. VASIL'EV AND T. YA. POMERANTSEVA. *Prom. Stroitel'nykh Materialov*, 1940, No. 10–11, pp. 41–43; *Khim. Referat. Zhur.*, 4 [4] 77–78 (1941).—The proposed method is based on the removal of the moisture from the tested material with dry ether. M.Ho.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

PROCESSES AND PROPERTIES INDEX

7

Ca

Colorimetric determination of nitrate with d-methyl umbelliferone. A. S. Vasil'ev and M. M. Dukhinova *Zavodskaya Lab.* 10, 35 7(1941). Place 0.3 ml. of the sample in a 10-ml. pycnometer, add 0.6 ml. of d-methyl umbelliferone, and mix thoroughly. Select the nearest standard and repeat the same operations. Place both pycnometers in a thermostat at 100° for 3-5 min. or in a glass of hot water, remove the pycnometers, dil. the contents with water and neutralize carefully with 25% NH_3 to a basic reaction. The amt. of NH_3 added to each pycnometer should be the same. Dil. the contents to the mark with water, transfer to cylinders of a Duboscq colorimeter and compare. The lemon-yellow coloration obtained is stable and is retained unchanged for several weeks. The coloration follows the Lambert-Beer law. The procedure requires 15 min. and may be used to det. up to 0.5 γ to within ±1%. For small concns. of nitrate the liquid layer should be 20-30 ml. high and for large concns. 10-20 ml. By the addn. of 0.5 ml. of 0.03% safranin per 10 ml. of soln. the yellow color is changed to yellow-pink, which facilitates visual evaluation of the color. The coloration of the safranin remained stable for days. Instead of adding an outside reagent various light filters were tested. Best results were obtained with 20% $CuSO_4$ soln.

B. Z. Kanich

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SLUKHOTSKIY, A.Ye.; FOGEL', A.A., kandidat tekhnicheskikh nauk, redaktor; VASIL'YEV, A.S., kandidat tekhnicheskikh nauk, retsenzent; SOKOLOVA, L.V., tekhnicheskiy redaktor.

[Inductors for hardening] Zakolochnye induktory. Pod red. A.A.Fogelia. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954. 46 p. (Bibliotechka vysokochastotnika-termista, no.6)(MLRA 7:11)
(Induction heating) (Metals--Hardening)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.S.; KONDRATSKIY, A.A.; FOGEL', A.A., kandidat tekhnicheskikh nauk, redaktor; SPITSYN, M.A., kandidat tekhnicheskikh nauk, retsenzent. SOKOLOVA, L.V., tekhnicheskiy redaktor.

[Vacuum-tube generators for high frequency heating] Lampovye generatory dlia vysokochastotnogo nagreva. Pod red. A.A.Fogelia. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroitel'noi i sudostroit. lit-ry, 1954. 50 p. (Bibliotechka vysokochastotnika-termista, no.9) (MLRA 7:12)
(Induction heating)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.S.; KONDRATSKIY, A.A.; FOGEL', A.A., redaktor.

[Electronic generators for high-frequency heating] Lampovye generatory dlia vysokochastotnogo nagreva. Pod red. A.A.Fogelia. Moskva- Leningrad, Mashgiz, 1954. 52 p. (MLRA 7:11D)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.S.

GLUKHANOV, N.P.; FOGEL', A.A., kandidat tekhnicheskikh nauk; redaktor; VASIL'YEV, A.S., kandidat tekhnicheskikh nauk; retsenzent; SOKOLOVA, L.V., tekhnicheskiy redaktor.

[Physical principles of high-frequency heating] Fizicheskie osnovy vysokochastotnogo nagreva. Pod red. A.A.Fogelia. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954. 54 p. (Bibliotechka vysokochastotnika-termista, no.2) (MLRA 7:11)
(Induction heating)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.S., kand.tekhn.nauk; DOROFEYEV, G.I., kand.tekhn.nauk; ACHKINADZE, Sh.D., red.; GVIRTS, V.L., tekhn.red.

[Changes in load parameters during induction heating under various operating conditions of generators] Izmenenie parametrov nagruzki pri induktsionnom nagreve v razlichnykh rezhimakh raboty mashinnogo generatora. Leningrad, 1955. 7 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Informatsionno tekhnicheskii listok, no.108(796)) (MIRA 10:12)

(Induction heating)

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Vasil'yev, A.S.

353

PHASE I BOOK EXPLOITATION

Vasil'yev, Aleksandr Sergeyevich.

Lampovyye generatory dlya vysokochastotnogo nagreva (Vacuum-tube Oscillators for High-frequency Heating) Moscow, Mashgiz, 1957. 60 p. (Bibliotechka vysokochastotnika-termista, vyp. 9) 10,000 copies printed.

Ed.: (title page): Fogel', A.A., Candidate of Technical Sciences; Reviewer: Donskoy, A.V., Doctor of Technical Sciences, Professor; Ed. of Publishing House: Gofman, Ye.K.; Tech. Ed.: Speranskaya, O.V. Editorial board of series: Fogel', A.A. (Chairman); Spitsyn, M.A. Candidate of Technical Sciences (Ed. of this issue); Slukhotskiy, A.Ye., Candidate of Technical Sciences; Glukhanov, N.P., Candidate of Technical Sciences, and Bamuner, A.V., Engineer.

PURPOSE: This monograph, one of a series of booklets published under the general title "Bibliotechka vysokochastotnika-termista" is addressed to a wide circle of workers in industry who are interested in high-frequency heating technique and equipment. The series is intended to encourage the widespread introduction of high-frequency heating, and the exchange of the latest production experience.

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Vacuum-tube Oscillators for High-frequency Heating (Cont.) 353

COVERAGE: This booklet is concerned with one phase of high-frequency heating technique, i.e., vacuum-tube oscillators for high-frequency heating. The series "Bibliotechka vysokochastotnika-termista" is devoted to publicizing the latest developments in the field of high-frequency heating, and the results of experimental work carried on by the Institute of High-Frequency Currents imeni V.P. Vologdin. Other work being carried on in this field in the Soviet Union and in the non-Soviet world is also covered. This booklet discusses the general principles for the design of vacuum-tube oscillators, and the function of the individual units. Commercial types of oscillators are described, and the problems of adjusting and tuning the units are discussed as well as the future development of vacuum-tube oscillators. This type of apparatus is important in many branches of industry where 100 kc/s currents are employed in dielectric and induction heating. In the USSR, all oscillators for this purpose are of the self-excitation type inasmuch as frequency stability is not important in the high-frequency heating of metals and semiconductors. The equipment is produced at the Leningrad

Card 2/5

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High-Frequency Equipment Plant. Included in the discussion of the development of vacuum-tube oscillators is a description of a new type of oscillator, the electron-tube inverter, with which it is possible to generate high-efficiency currents of various frequencies. Various types of equipment of Soviet manufacture are described and a table of specifications is presented (pp 48, 49). No personalities are mentioned. A complete list of all the booklets of the series is given at the end of each issue (on inside back cover). There is a bibliography of 4 Soviet sources.

TABLE OF CONTENTS:

Introduction 3

1. General Information 3

2. Vacuum-Tube Static Operation Conditions 8

3. Vacuum-Tube Dynamic Operation Conditions 11

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

Vacuum-tube Oscillators for High-frequency Heating (Cont.) 353

4. Conditions for Obtaining Maximum Capacity 12

5. Conditions for Realizing Maximum Tube Efficiency 14

6. The Oscillator Anode Circuit 17

7. The Anode Circuit in the Case of a Two-Tube Circuit 19

8. Self-Excitation in Vacuum-Tube Oscillator Circuits 23

9. The Vacuum-Tube Oscillator Grid Circuit 26

10. Matching the Load With the Tube Parameters in the Vacuum-Tube Oscillator 33

11. The Rectifier, Control and Blocking Circuit 41

Card 4/5

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

Vacuum-tube Oscillators for High-frequency Heating (Cont.) 353

12. Commercial Vacuum-Tube Oscillators for Induction Heating 46

13. The Onset of Parasitic Oscillations and How to Suppress Them 54

14. Shielding Vacuum-Tube Oscillators 56

15. Future Prospects for the Development of Vacuum-Tube Oscillators 57

Bibliography 61

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Card 5/5

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June 4, 1958

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Vasil'yev, A.S.

SLUKHOTSKIY, A.Ye.; VASIL'YEV, A.S.; MARTSINOVICH, V.M.

Analyzing the performance of a series ionic converter. Radiotekh. i elektron. 4 no.1:63-69 Ja '59. (MIRA 12:1)
(Electric current converters)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

ACC NR: AT6023562 (N) SOURCE CODE: UR/3095/66/036/000/0163/0167

AUTHOR: Vasil'yev, A. S.; Nazarov, V. S.

ORG: None

TITLE: Equipment for detecting anchored hydrological buoys

SOURCE: AN UkrSSR. Morskoy gidrofizicheskiy institut. Trudy, v. 36, 1966. Metody i pribory dlya issledovaniya fizicheskikh protsessov v okeane (Methods and instruments for studying physical processes in the ocean), 163-167

TOPIC TAGS: ocean current, oceanographic equipment, oceanographic ship, oceanography, electronic engineering, radar equipment, marine equipment, electronic equipment, acoustic detection equipment, individual floating equipment, hydrologic instrument/ Mikhail Lomonosov oceanographic ship

ABSTRACT: The Marine Hydrophysical Institute [morskoy gidrofizicheskiy institut] of the Academy of Sciences of the Ukranian SSR has recently been using anchored, self-contained, buoys to measure current parameters, particularly in conjunction with the expeditions embarked in the scientific research ship Mikhail Lomonosov. However, the buoys are difficult to find, particularly since they are set out in the ocean anywhere from 4 to 100 miles and more apart. Use has been made of shipboard radar, buoy reflectors and radio transmitter beacons, and signal lights, usually of the flashing type. Those developed by the Institute are described, and tests of them

Card 1/2

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made by Mikhail Lomonosov have proved the circuitry to be reliable and the operating ranges satisfactory for the purposes intended. The author expresses his thanks to his coworkers in the Marine Instruments Laboratory, A. G. Sukhoveya and E. M. Dobruskina, who were of considerable help in designing and testing the equipments described. Orig. art. has: 3 figures.

SUB CODE: 08/SUBM DATE: None/ORIG REF: 003

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820008-1

VASIL'YEV, A.S.; DONSKOY, A.V., doktor tekhn. nauk, prof., retsenzent; FOGEL', A.A., kand. tekhn. nauk, red.

[Electron-tube oscillators for high-frequency heating] Lampovye generatory dlia vysokochastotnogo nagreva. Moskva, Mashinostroenie, 1965. 81 p. (Bibliotechka vysokochastotnika-termista, no.9) (MIRA 18:11)

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PROCESSES AND PROPERTIES INDEX

BC

A-1

Fluorescence spectra of aniline vapour. A. T. VARTANJAN. (Bull. Acad. Sci. U.R.S.S., 1938, Sér. Phys., 341—368).—At low pressures (0·02 mm.) and room temp. the fluorescence spectrum of NH_2Ph depends on the λ of the exciting radiation. A discontinuous spectrum is obtained with exciting radiation of λ 2937 A. and a continuous one with λ 2800 A. The discontinuous emission is a resonance emission from the 34034 cm.$^{-1}$ level. Where absorption and fluorescence spectra overlap, the bands of both coincide. The fluorescence spectrum becomes more diffuse with rise of temp. and pressure. In the presence of foreign gases (except O_2) the intensity of many bands increased. O_2 is the strongest quencher of the fluorescence of NH_2Ph vapour.

A. J. M.

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

BC

a-1

Oxidation of thin films of calcium exposed to light in presence of hydrogen. A. T. VARTANJAN (J. Gen. Chem. Russ., 1938, 8, 1098—1105).—Ca is resistant to oxidation by O_2 after exposure to H_2, with which it forms a stable compound. The protective film can be removed by heat, that due to absorption of red and infra-red light from a C arc sufficing for the purpose. Disintegration of the film is more rapid in presence than in absence of O_2. The most stable films are obtained by exposure of Ca to H_2 after prolonged storage in high vac. in absence of O_2. Gradual access of O_2 causes formation of a protective CaO film.

R. T.

COMMON ELEMENTS

MATERIALS INDEX

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

A-1

BC

Quenching of fluorescence and photothermal decomposition of aniline. A. T. VARTANIAN (J. Phys. Chem. Russ., 1938, 12, 308—325).—The fluorescence of NH_2Ph vapour at $p = 0{\cdot}02$ mm. Hg at room temp. is quenched by O_2 more strongly than by NH_3 or H_2; the calc. effective cross-sections of these mols. are 74, 5, and $0{\cdot}67 \times 10^{-16}$ sq. cm. respectively. The intensity of the fluorescence of NH_2Ph at const. p decreases with rising temp. (18—400°); the allowance for the increase of absorption due to the v.d. increasing with temp. is not sufficient to explain it. The absorption per mol. for 2650 and 2800 A. is independent of temp. Heating of NH_2Ph to 400° in vac. has no effect but heating and irradiation in a quartz vessel produce new substances which apparently include H_2, NH_3, and N_2H_4 in addition to a fluorescent and a solid substance. J. J. B.

COMMON ELEMENTS

COMMON VARIABLES INDEX

MATERIALS INDEX

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3

24

Investigation of the structure of the fluorescence spectrum of aniline vapor. A. Vartanyan.—J. Phys. (U. S. S. R.) 1, 213-28(1939).—See C. A. 33, 4523[1]. A. D.

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BC

A-1

Ultra-violet absorption spectrum and fluorescence of benzidine vapour. A. T. VARTANIAN (Compt. rend. Acad. Sci. U.R.S.S., 1939, 23, 618—621).—For v.d. corresponding with 200—250° the long-λ region of absorption of benzidine (I) lies between 3100 and 2450 A. (max. 2850 A.); the short-λ region begins at 2300 A. Increase of v.p. causes the two regions to coalesce, forming a single broad absorption band, the long-λ limit being displaced to longer λλ. If the vapour is heated at 200° for 4 hr. NH_2 bands appear. The fluorescence spectrum is a single intense band from 2950 to 4600 A. (max. 3700 A.). The violet luminescence becomes visible only at > 120°. Increase in v.d. causes an increase in the intensity of fluorescence up to max. at 200°. Fluorescence is observed also in the solid state and in EtOH solution. The absorption spectra of NH_2-derivatives of C_6H_6 usually contain a region of absorption depending on electronic transitions in the substituent, but this has not been observed for (I), owing probably to the small thickness of the absorbing layer and to the high temp. necessary to produce a sufficient v.d. W. R. A.

Lab. Photo-Chemistry. State Optical Inst., Leningrad

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

3

Extinction of the fluorescence and photothermal decomposition of aniline. A. Vartanyan. *J. Phys.* (U. S. S. R.) 3, 467-78(1940)(in French).—Study of the extinction of fluorescence of aniline vapor by gases like O_2, H_2, N_2 or NH_3 indicates that, with the exception of O, their effect is weak. The strong effect of O is due to an oxidation of the excited aniline mol. The order of magnitude of the period of the excited state of aniline is 9×10^{-9} sec. The neg. linear temp. coeff. of the fluorescence depends on the period of excitation or unimol. thermal extinction. A decompn. occurs yielding NH_3, H_2 and many complex products. The thermal extinction is attributed to thermal decompn. at the C-N, C-H and N-H bonds. The decompn. of the bonds C-H (117 kg.-cal./mol.) and N-H (113 kg.-cal./mol.) is evidently due to an accumulation of heat energy at the site of disruption. S. R. Korman

Lab. of Photochemistry, State Optical Inst., Leningrad

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Br. Abs. A I - 9, ~~Properties~~ Preparation of Inorganic Substances

Photochemical investigation of dark-coloured aniline. A. F. Vartanyan (Compt. rend. Acad. Sci. U.R.S.S., 1941, 30, 635-638). - Pure NH_2Ph kept in a high vac. (10^{-5} mm.) did not become discoloured on keeping in the dark or on exposure to diffuse daylight. It rapidly became coloured with exposed to Hg sparks filtered through Iceland spar or gelatin. Light of $\lambda > 2800$ A. is effective. Increase of temp. causes a considerable increase in the velocity of the photochemical reaction, and the walls of the vessel become covered with resinous products, consisting of a volatile and a nonvolatile portion. H_2 and NH_3 are also formed. C_6H_6 could not be detected spectrographically owing to the extenction effect of NH_2Ph. Excitation of the vapour in a quartz vessel gives rise to a yellowish-green fluorescence with a continuous spectrum over the range 6300-3840 A. The carrier of the fluorescence is probably azophenine. The primary processes are the splitting off of NH_2 and H from the Ph radical, as is shown by the analysis of the absorption spectrum of NH_2Ph. The reactions are: $NH_2Ph + h\nu \rightarrow NHPh + H$; $NH_2Ph + h\nu = C_6H_4 \cdot NH_2 + H$; $NH_2Ph + h\nu = Ph \cdot NH_2$. The radicals $C_6H_4NH_2$, $NHPh$, and $C_6H_4 \cdot NH$ lead to the formation of azophenine. Increase of temp. causes a displacement of the predissociation limit and the continuous absorption towards longer $\lambda\lambda$. A.J.L.

Photochemical Lab. State Optical Inst., Leningrad.

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2

A new apparatus for testing the light-fastness of colors. A. T. Vo[illegible] (State Optical Inst.). *J. Tech. Phys.* (U.S.S.R.) [illegible]. —The app. has a cylindrical shape. [illegible] the cylinder is placed a 2000-w. bulb. [illegible] light filter made of a 3-mm. thick [illegible] has passed the filter has the intensity [illegible] the daylight in the visible part of the [illegible] less ultraviolet. Between the bulb and the light filter cooling water circulates. The light filter is cooled also at the outside of a current of humid air. Around it the external cylinder is situated; colored specimens are attached to the interior surface of this cylinder. The cylinder makes one revolution in 5 min. The distance between the specimens and the incandescent wire in the bulb is 12 cm. and the intensity of illumination is 80,000 lux, i.e., stronger than the av. daylight. The temp. of the specimens reaches 40-45°. The dyes Scharlach 3B, Permanent Red R, and Goudron Blue G fade in this app. more rapidly than in daylight, but the ratio of the rates of fading remains const. The app. can be modified for an accelerated testing: instead of air, O_2 at 5 atm. pressure is blown over the specimens. The rate of fading of crystal violet has the temp. coeff. of 1.1 between −40° and 60°. The best R.H. is 40-60%.

J. J. Bikerman

State Optical Inst., Lab. Photochemistry

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

CA

3

Photoconductivity of thin films of organic dyes in the solid state. A. T. Vartanyan. *J. Phys. Chem.* (U.S.S.R.) **20**, 1065-80(1946)(in Russian). Films, 0.5 to 10 μ thick, were deposited from alc. soln. on a quartz test tube between 2 Au electrodes situated 0.5 mm. apart, and illuminated. Their elec. cond. κ, which usually was scarcely measurable in the dark, increased within 2-60 min. to a steady value κ_0, when, then, the illumination ceased, κ returned to its original value within 10 min. to several hrs. The greatest ratio of κ_0 to κ in darkness was shown by Crystal Violet (*Color Index* 681); it was about 1000 for 100 lux. Other basic dyes (with their *Color Index* numbers) which show the effect are, e.g., Methyl Violet B (683), Fuchsine (677), Brilliant Green (662), Malachite Green (657), Auramine O (655), Rhodamine B (749), Rhodamine 6G (752), Pinaverdol (807), Pinacyanol (808), and Phenosafranine (840). Acidic dyes are not sensitive to light. Only light absorbed by the dye is active. The photocond. is small at low temp. (e.g., −20°). Its decay after cessation of illumination is the faster the higher the temp. (0°-50°). The decay satisfies the equation $(1/\kappa_0) - (1/\kappa_0) = kt$, κ_0 being the cond. t sec. after the discontinuation of irradiation, and k a const. The value of κ_0 does not depend on previous illuminations, but it is reached more rapidly if the film was illuminated before. The rise of κ to κ_0 in the light is not affected by elec. field. The deviations from Ohm's law do not exceed 10%. The behavior of the dyes is similar to that of many other semiconductors. 58 references. I. J. Bikerman

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PA 9T13

VARTANIAN, A.

USSR/Dyes, Photosensitive
Photoconductivity

Feb 1947

"Photoconductivity of Thin Layers of Dye in the Solid State," A. Vartanian, 26 pp

"Acta Physicochimica" Vol XXII, No 2

An investigation of the effect of light in vacuo on the electric conductivity of thin, solid deposits of organic dyes, showing the dyes to be semi-conductors.

State Optical Inst.,Photo-Chem. Lab., Leningrad

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Jul 48

USSR/Physics
Semiconductivity
Dyes

"Semiconductive Properties of Organic Dyes: I. Phthalocyanines," A. T. Vartanyan, State Ord of Lenin Opt Inst, Leningrad, 13½ pp

"Zhur Fiz Khim" Vol XXII, No 7

Measured dark conductivity of fine films of phthalocyanines in a solid state in a vacuum to establish their "specific" conductivity. Study of volt-ampere characteristics in a vacuum and in oxygen revealed deviation from Ohm's Law attributed

55/49T108

Jul 48

USSR/Physics (Contd)

to Joule effect. Oxygen appreciably lessened the energy of electron splitoff in the case of phthalocyanines of copper and magnesium, and increased it slightly in the case of phthalocyanine (without metal) and sulfonated phthalocyanine. Noted no change in conductivity under visible or ultraviolet light, but noted an increase as a result of light absorption during heating of the film. Submitted 3 Apr 47.

55/49T108

VARTANYAN, A. T.

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Absorption-spectral curves of solid films of dyes. A. T. Vartanyan. *Zhur. Tekh. Fiz.* 20, 847-53(1950).— Continuous films of 24 org. dyes were produced successfully by rapid evapn. of alc. solns. on quartz plates. Absorption spectra from about 2300 A. to the end of the visible are given without correction for the selective reflection which, at the max. of absorption, may attain 15-20%. Spectra are given for (in parentheses, nos. of the Schultz tables): eosin, auramine (752), malachite green (754), Turquoise Blue J (757), Bright Green (760), fuchsin (780), crystal violet (785), Acid Violet 6B (803), Patent Blue (826), Cyanine B (829), Pyronine J (853), Rhodamine B (864), Rhodamine 6 JDN (866) Na fluorescein (880), eosin (881), Erythrosin B (887), Phloxine (890), Bengal Rose B (891), Acridine Yellow (901), Tripaflavine (906), Ethylcyanine (921), Phenosafranine (958), Safranine (907), methylene blue (free from $ZnCl_2$) (1038), Toluidine Blue (1041). Difficulties are experienced in producing films of methylene blue; continuous selectively reflecting films can be produced on quartz plates heated to 100-20°, but they crumble on exposure to moist air unless they are protected by petrolatum. Such films give the absorption spectrum characteristic of the solid, whereas films made from aq. soln. in the presence of gelatin, after Holmes (*C.A.* 18, 787), show much more similarity to the absorption spectrum of the concd. soln. On the whole, absorption in the visible of solid films differs from the solns. in that the maxima are displaced, their relative heights altered, and the absorption bands broadened. Shifts of the max. to longer waves are particularly pronounced in the Rhodamines. Absorption in the ultraviolet, as compared with that in the visible, is enhanced in the solid films, in conformity with the different origins of the absorptions in the visible and in the ultraviolet. Insofar as the appearance of addnl. secondary peaks in visible absorption bands is due to mol. assocn., it is evident that this phenomenon should be much more pronounced in the solid state, and sometimes increase on aging. Occasionally, a secondary peak in soln. becomes the main peak in the solid film. N. Thon

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CA

Semiconductivity of organic dyes. II. Trypaflavine. A. T. Vartanyan. *Zhur. Fiz. Khim.* 24, 1361-70(1950); cf. *C.A.* 43, 1272g.—Chromatographically pure trypaflavine was deposited in solid films 0.1-1.0 μ thick by crystn. from an alc. soln. on a quartz plate. In the dark, the resistance of the films is higher than 10^{14} ohm.; *in vacuo* under ultraviolet or visible radiation, a photocurrent is observed, which attains its const. value 1 min. after the beginning of irradiation and decreases to zero in about 1 min. after the light is cut off. This inertia is not due to the heat given off during illumination, since heating up to 100° does not give any current. The relation between photocurrent and voltage is linear (up to 5000 v./cm.). The dye films present max. of light absorption at 2500 and at 4500 A. The spectral distribution curves of the photocurrent depend in shape and position on the thickness of the film. For films of a few tenths μ, photoconduction takes place in the entire absorption band of the dye. The photocurrent intensity divided by the amt. of energy absorbed increases with the wave length, passes through a max. at 5000 A., and falls to zero between 5000 and 6000 A. Thus when a photon is absorbed, the excited electron or hole is not free to move through the lattice; thermal energy must be supplied to achieve this. A plot of log photocurrent vs. $1/T$ is linear, corresponding to an activation energy of 0.5 e.v. (between 20 and 100°). The photocurrent depends linearly on the light intensity (at 5400, 4300 and 3660 A.). O does not affect the cond. in the dark. Under light, the photocond. does not change for wave lengths larger than 5000 A. For decreasing wave lengths, the photocond. first increases owing to O photosorption, but decreases subsequently owing to photooxidation of the dye. For light below 4000 A., the photocurrents *in vacuo* and in O again coincide. The variation of photocurrent with O pressure p (wave length = 5520 A.) obeys the equation: $i_p - i_0 = ap/(b + cp)$, where i_p is the photocurrent for p between 100 and 450 mm., i_0 is the photocurrent *in vacuo*, and a, b, c are consts. Thus the spectral distribution curve of the photocurrent in presence of O is the result of 2 processes: photosorption of O (increasing i) and photooxidation (bleaching) of the dye (decreasing i). The latter process is slow, and its importance depends on the duration of illumination and on the wave length.

Michel Boudart

1951

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USSR/Physics - Photoconductivity 1 Apr 50

"Photoconductivity of Solid Anthracene," A. T. Vartanyan

"Dok Ak Nauk SSSR" Vol LXXI, No 4, pp 641, 642

PA 175T75

Discussion of agreements and contradictions found in the works of Bayliss and Riviere ("Nature" 163, 765, 1949), Volmer ("Nature" 40, 775, 1913), and Hughes ("Phil Mag" 24, 380, 1912), especially in connection with effect of air upon photocurrent. Herein expt show that during illumination by monochromatic light the fine films of anthracene pptd from alc soln

175T75

USSR/Physics - Photoconductivity (Contd) 1 Apr 50

between platinum electrodes disclose photocond, boundary of which is in region of 4,000 A. Submitted 2 Feb 50 by Acad A. N. Terenin.

175T75

VARTANYAN, A. T.

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