TRIFONOV, Ye.D.; TAMARCHENKO, V.I.

Inverse problem in luminescence theory. Vest. LGU 20 no.16: 21-25 '65. (MIRA 18:9)

L 14205-66 EWT(l)/EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP6003611 SOURCE CODE: UR/0054/65/000/003/0021/0025

AUTHOR: Trifonov, Ye. D.; Tamarchenko, V. I.

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet)

TITLE: Reverse problem in the theory of luminescence

SOURCE: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 3, 1965, 21-25

TOPIC TAGS: luminescence, cadmium sulfide, electron transition, impurity center, crystal lattice vibration, distribution function

ABSTRACT: The reverse problem relates to restoring the distribution function of the displacements of normal coordinates of a crystal by using experimental emission or absorption spectra (considered to have mirror symmetry). This distribution completely characterizes the interaction of an electron transition in an impurity center with vibrations of the lattice. The distribution function is represented as a series whose members are successive contractions of the spectrum. An emission spectrum of an impurity in a CdS crystal is considered. The calculation was performed with a BESM-2 computer for several experimentally obtain-

Card 1/2 UDC: 535.370

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ACC NR: AP6003611

2

ed spectra taken at 4.2°K. The results showed a strong interaction with long-wave acoustic vibrations. In conclusion, the authors thank M. I. Petrashen' and I. V. Abarenkov for a number of useful suggestions. Orig. art. has: 1 figure, 22 formulas.

SUB CODE: 20/ SUBM DATE: 05Apr65/ ORIG REF: 005/ OTH REF: 004

TS

Card 2/2

TAMARCHENKO, V.S.

New type of shears for the cutting of molten glass. Stek. i ker. 22 no.8:32-33 Ag '65. (MIRA 18:9)

1. Moskovskiy elektrolampovyy zavod.

SOV/96-58-5-3/27

AUTHORS: Polikovskiy, M.V. and Tamarchin, A.L., Engineers

TITLE: Tests on a Sonic Regulating Stage by the Kaluga Turbine Works with Partial Steam Supply (Ispytaniya okolozvukovoy reguliruyushchey stupeni KTZ s partsial'nym podvodom para)

PERIODICAL: Teploenergetika, 1958, Nr 5, pp 17 - 21 (USSR).

ABSTRACT: Experimental work by the Kaluga Turbine Works in co-operation with the MEI (Moscow Power Institute) the BITM and other institutes has resulted in a marked increase in the efficiency of the works turbines. In particular, it was possible to raise the efficiency of sonic two-row regulating stages from 56.5% in 1954 to 72.7% in 1957. This has been accomplished mainly by using aero-dynamic blade shapes developed in the Moscow Power Institute. Work on sonic regulating stages for the high-pressure cylinder of 3,000 rpm turbines has proceeded in the works laboratory since 1953 on experimental steam turbine, type ET-300.
During the tests, the initial pressure is held to within 0.01 atm. and the temperature to within 2 - 4 °C. The turbine is loaded by a two-disc hydraulic brake, illustrated in Figure 2. The brake load is regulated by adjusting the flow of water and covers the range 60 - 350 kW at 3,000 rpm. The method of

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Tests on a Sonic Regulating Stage by the Kaluga Turbine Works with Partial Steam Supply

applying load is described and the test procedure for determining the no-load power and the efficiency is indicated. The tests established the numerical influence of the area-ratio on the efficiency of regulating stage, type KS-1A. At present, The Kaluga Turbine Works employs this stage in nine types of turbine with outputs of 2,500 - 12,000 kW. Three stages were tested and the corresponding area-ratios are given in Table 1. The mean diameter of the stages was 800 mm and the main characteristics of the blading were as given in Table 2. The values of the various gaps are recorded in Figure 3 and the associated table. All the tests were made with super-heated steam, with initial conditions of 3.5 atm. and 200 °C with sonic pressure ratios on the stage. The test results are given in Figures 4 - 6, showing that the most efficient of the three stages is Nr 2.

Graphs of the loss with outlet velocity are given in Figure 7 which shows that in stage 2, the least loss, of 2%, occurs with a velocity ratio of 0.22. The use of the i/s diagram to calculate the outlet velocity loss is demonstrated in Figure 8.

Stages Nrs 2 and 3 were tested with various axial gaps; the

adjustments were generally made by displacing the rotor whilst leaving the nozzles and guide vanes in position. Efficiency curves for stage Nr 2 are given in Figure 10 and for stage Nr 3 in Figure 11. Stages 2A and 3A differ from 2 and 3 in that they have a smaller front axial gap; the corresponding curves from Figures 5 and 6 are shown in dotted lines. It will be seen that the influence of gap distribution is very considerable.

It is concluded that the variants of stage, type KS-1A, are very efficient when tested with partial steam supply and short blades. The tests show that the blading is of high aero-dynamic quality over a wide range of flow conditions. Quite a small reduction in the forward axial gap increases the stage efficiency by 2 - 2 1/2 %. There are 11 figures and 2 tables.

ASSOCIATION: Kaluzhskiy turbinnyy zavod (Kaluga Turbine Works)

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S/056/62/042/003/043/049
B152/B102

AUTHORS: Strakhovskiy G. M., Tamarenkov V. M.

TITLE: Radiation of molecules under resonance conditions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 3, 1962, 907-908

TEXT: The radiation of a molecular beam in a coherent field is investigated. The molecules are in a mixed energy state with two levels. The beam on entering a cavity will continue radiating when the cavity is tuned to the transition frequency $h\nu_{12} = E_1 - E_2$, although the number of molecules in the upper and lower level is the same. The function of the two-level system is $\psi = a\psi_1 + b\psi_2$; $|a|^2 + |b|^2 = 1$, a(+) depends on μ, E and $(\nu - \nu_0)$. μ is the dipole moment and E the resonance field strength of the frequency ν, $\nu \approx \nu_0$, ν_0 is the frequency of the molecular transition. Such a state can be obtained with an ammonia beam leaving the cavity of a normal molecular generator; it is saturated, i. e. the populations of the

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two levels are equal, is inactive and can emit only non-coherent oscillations, spontaneously. Entering a second cavity the molecules will emit electromagnetic oscillations of the frequency of the first resonator and this frequency is completely independent of the resonance frequency. of the second cavity. The apparatus consisted of 3 test cavities the first of which worked as an ordinary molecular generator and an NH_3 spectroscope. The radiation frequency in the second cavity was highly monochromatic and coincided with that of the first cavity to an accuracy of 10^{-12}. The radiation power in the second and third cavity was measured in dependence on the tuning of the first and second, on the voltage V of the grading system, and on the ammonia gas pressure in the source. When the radiation power in the second cavity vanishes the beam passing through the third cavity does not radiate, but shows an intense absorption line. At certain V and p values the beam leaving the first cavity also absorbs energy even in the second cavity. In this case the population of the energy levels during the flight through the second cavity is a periodic function of time and of the number of active molecules in the beam. On detuning the first cavity by $\Delta\nu_1 = \pm 4$ Mc/sec

when the shf field in it vanishes, beats between the frequency of the "molecular sound" and the natural frequency of the second cavity are found in the latter. The beat frequency is 3-4 kc/sec. Further detuning of the first cavity causes cessation of the "molecular sound". There are 3 figures and 5 references: 1 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: R. H. Dicke, Phys. Rev., 93, 99, 1954; Rev. Sci. Instr., 26, 915, 1955; W. H. Higa, Rev. Sci. Instr., 28, 726, 1957; W. H. Wells, J. Appl. Phys., 29, 714, 1958; N. Sher, IRE Nat. Conv. Rec., 4199, 78, 1960.

SUBMITTED: December 30, 1961

Card 3/3

Tamarin, A.

SLOBODKIN, L., inzhener; TAMARIN, A., inzhener.

Drying grain in suspended state. Muk.elev.prom. 23 no.9:7-9 S '57.
(MIRA 10:11)

1. Institut energetiki AN SSSR.
(Grain--Drying)

TAMARIN, A.

All-Union Conference on the Production of Reinforced Concrete Structural Elements. Prom. stroi. 42 no.1:3 of cover '65.
(MIRA 18:3)

S/139/60/000/006/024/032
E032/E414

AUTHORS: Remizova, A.A. and Tamarin, A.A.

TITLE: Effect of Impurities on the Anomalous Thermal Expansion in the Neighbourhood of the Melting Point

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No.6, pp.152-156

TEXT: Using Frenkel's theory (Ref.1) of phase fluctuations, Bartenev (Ref.2,3) has obtained an expression for the correction which has to be added to the volume expansion coefficient in order to account for phase fluctuations. This correction is given by

$$\beta_{an} = \frac{v_2 - v_1}{v_1} \frac{k}{\gamma\mu} \frac{T_o^2}{(T_o - T)^2} \qquad (1)$$

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where T_0 is the transition temperature, γ is the latent heat of melting, v_1 and v_2 are the specific volumes of the solid and liquid phases and a is a constant representing the minimum statistical complex of particles capable of experiencing a phase transition. The physical basis of this phenomenon is that the second derivatives of the thermodynamic potential gradually tend to infinity as one approaches the melting point and the process begins a few degrees, and sometimes even tens of degrees, before the melting point is reached. This in turn is due to the fact that melting takes place not at a definite temperature but in a certain temperature interval. Owing to the gradual increase in the amount of liquid phase just before the melting point is reached, both the specific heat and the thermal expansion coefficient exhibit an anomalous behaviour in this region and must include additional terms of the above type (Eq.1). If, moreover, the system includes small amounts of soluble impurities which are uniformly distributed through the

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volume then these impurities may introduce a further small effect. When the impurities are distributed uniformly on the macroscopic scale while on the microscopic scale there is a statistical nonuniformity, the anomalous part of the thermal expansion coefficient can be calculated from the following expression obtained by Bartenev in Ref.3

$$\beta_{an} = \frac{v_2 - v_1}{v_1} \sum \frac{e^{-a}}{T_o - T_a} \frac{a^{x-1}}{x!} \qquad (2)$$

where T_o and T_a are the melting points of microvolumes free of impurities and containing a impurity molecules respectively, x is the number of impurity atoms in the microvolume, and a is the mean number of impurity atoms in

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microvolume. In order to calculate β_{an} from this formula one must have a knowledge of the microvolume which was called by Bartenev "a quantum of melting". The latter consists of 10^3 to 10^4 atoms. Another theory which is better known at the present time is that put forward by Dickinson and Osborne (Ref 4) but the present authors consider that it is physically untenable. This theory was critically examined by the first of the present authors in Ref.5. It is well-known that the characteristic feature of binary systems is the fact that liquidus and solidus lines on the equilibrium diagram are not the same. In the present case this means that there are different concentrations of the impurity in solid and liquid phases which are in equilibrium during the crystallization process. The ratio of the impurity concentrations in the solid and liquid phases is defined as the distribution coefficient k which can be either greater or smaller than unity. In the determination of the distribution of the impurity in a crystallized specimen, one may

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introduce the simplifying assumption that the diffusion rate in the solid phase is negligible, while in the liquid phase it is very large, so that the impurities are distributed uniformly. It may then be assumed that when the crystallization rate is sufficiently small, a thin layer of the crystal in contact with the separation boundary is in fact in equilibrium with the whole liquid and the impurity concentration ratio in them is equal to k. On these assumptions it has been shown that the concentration c' of the solid layer crystallizing at a given moment is given by (Gulliver, Scheuer, Hayes, Chipman and McFee - Ref.6 to 9)

Eq. (4)

$$c' = c_0 \kappa \left(1 - \frac{m}{M}\right)^{\kappa - 1}, \qquad (4)$$

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where c_o is the average impurity concentration, m is the amount of crystallized liquid and M is the mass of the specimen. When $k < 1$, c' increases with the amount of the solid phase. Using Eq.(4), one can show that the amount of mass whose concentration lies between c' and c' + dc' is given by

Eq. (5)

$$\frac{dm}{dc'} = -M \frac{(c')^{\frac{2-\kappa}{\kappa-1}}}{\kappa-1} \left(\frac{1}{c_0 \kappa}\right)^{\frac{1}{\kappa-1}} \qquad (5)$$

Assuming that the solidus curve is linear, i.e. $\alpha c' = T - T_o$, where α is a constant, one can show that dm/dT, which is:

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required in the expression for the anomalous part of the expansion coefficient, is given by

Eq. (8)

$$\frac{dm}{dT} = M \frac{(\alpha c_0 \kappa)^{\frac{1}{1-\kappa}}}{(1-\kappa)(T-T_0)^{\frac{2-\kappa}{1-\kappa}}} \qquad (8)$$

In the derivation of these expressions it is assumed that k is constant. It follows that $c_0 k$ represents the concentration of the solid phase at the beginning of the crystallization process, and $c_0 k\alpha$ represents the depression of the beginning of the crystallization with the mean concentration equal to c_0, i.e. $c_0 k\alpha = T_c - T_0$. In this case Eq.(8) may be

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replaced by

превратится тогда в

Eq. (8')

$$\frac{dm}{dT} = M\frac{(T_c-T_0)^{\frac{1}{1-\kappa}}}{(1-\kappa)(T-T_0)^{\frac{2-\kappa}{1-\kappa}}} \qquad (8')$$

Neglecting second order effects and assuming that the anomalous part of the volume expansion coefficient is due to a change in the volume of the melting part of the specimen owing to the difference between the specific volumes of liquid and solid phases, one finally finds that the anomalous part of the expansion coefficient is given by

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Eq. (9)

$$\beta_{ан} = \frac{v_2 - v_1}{v_1} \cdot \frac{(T_0 - T_c)^{\frac{1}{1-\kappa}}}{(1-\kappa)(T_0 - T)^{\frac{2-\kappa}{1-\kappa}}} \qquad (9)$$

The Dickinson-Osborne formula is a special case of this expression ($k = 0$). The present authors have tested this expression experimentally by measuring the volume expansion coefficient of naphthalene containing small amounts of azobenzene. Doubly sublimated naphthalene was used; the results are shown in Fig.1, (0.27% azobenzene impurity). The points are experimental and the dotted curve marked 2 was calculated from Eq.(9). The dotted curves marked 3 and 1

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represent the calculations based on the Dickinson-Osborne and Bartenev formulae respectively. There are 1 figure and 11 references: 6 Soviet and 5 non-Soviet.

ASSOCIATION: Moskovskiy pedinstitut im. V.P.Potemkina
(Moscow Pedagogical Institute imeni V.P.Potemkin)

SUBMITTED: December 4, 1959

Card 10/11

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E032/E414

Effect of Impurities on the Anomalous Thermal Expansion in the Neighbourhood of the Melting Point

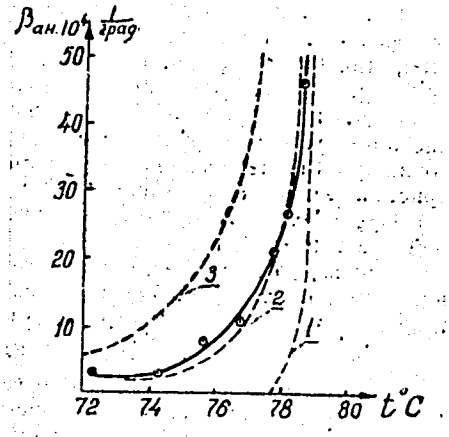

Рис. 1. Температурная зависимость коэффициента объемного расширения нафталина с добавкой 0,27% азобензола вблизи точки плавления.

Fig.1.

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REMIZOVA, A.A.; TAMARIN, A.A.

Instability of melting points due to small impurities. Uch. zap. Mosk. gor. ped. inst. 86:229-242 '60. (MIRA 16:3)
(Melting points)

L 12636-65 EWT(m)/EWP(w)/EWA(d)/EWP(t)/EWP(b) IJP(c) JD
ACCESSION NR: AR4044051 S/0058/63/000/011/E057/E057

SOURCE: Ref. zh. Fizika, Abs. 11E445

AUTHOR: Tamarin, A. A.

TITLE: Thermal properties of tin near the melting point

CITED SOURCE: Uch. zap. Mosk. obl. ped. in-ta, v. 119, 1962, 217-222

TOPIC TAGS: thermal property, tin, melting point

TRANSLATION: Proposes that anomalous heat capacity and thermal expansion in the premelting region are explained by the presence of impurities and by their nonuniform distribution throughout as a result of displacement into the liquid phase on crystallization. For anomalous thermal expansion in this case the following formula is obtained:

$$\beta_{an} = \frac{(v_2 - v_1)}{v_1} \frac{(T_1 - T_2)}{(1-k)(T-T_1)^2}.$$

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where v_1, v_2 are the specific volumes of the solid and liquid phases; T_0 is the melting point of pure substance; T_c is the equilibrium temperature of the liquid phase and impurity and the solid phase; k is the coefficient of entry of the impurity. The formulas were checked using Sn with Pb, Bi, and Sb impurities. Anomalous phenomena in pure Sn were not detected.

SUB CODE: IC, TD ENCL: 00

TAMARIN, A. A.

PA 26/49T43

USSR/Engineering — Jan 49
Concrete, Reinforced
Stress Analysis

"Method for Calculation of the Resistance to Cracking of Concrete and Reinforced Concrete Beams," A. A. Tamarin, 3 pp

"Stroitel' Prom" No 1

Experiments at TsNIPS showed that computations at the moment of the appearance of flaws have to be predicated on three assumptions: (1) cross section of part being bent remains flat, (2) tension diagram in stress zone has form

FDB — 26/49T43

USSR/Engineering (Contd) — Jan 49

of right-angle square, while in compression zone it assumes shape of triangle, and (3) maximum give in concrete equals 1.5×10^{-4}. Reports of experiments conducted to determine crack and flaw resistance of concrete and ferro-concrete test pieces.

FDB — 26/49T43

TAMARIN, A. A.

Opyt shevingovaniia krupnykh zubchatykh koles turbinnykh reduktorov. (Vestn. Mash., 1951, no. 6, p. 24-30)

Practice in shaving large gear wheels of turbine reductors.

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

TAMARIN, A.A., kandidat tekhnicheskikh nauk; KHAYDUKOV, G.K., kandidat tekhnicheskikh nauk; FOLOMEYEV, A.A., inzhener.

Mechanization of preparation, transporting and applying of emulsion-oil lubricants. Mekh.stroi. 12 no.3:8-10 Mr '55. (MLRA 8:4)
(Precast concrete construction--Formwork)

TAMARIN, A.A., kandidat tekhnicheskikh nauk.

Deformations in prestressed reinforced elements. Transp. stroi. 6 no.12:15-20 D '56. (MLRA 10:3)
(Prestressed concrete)

TAMARIN, A.A., kandidat tekhnicheskikh nauk.

Moulding hollow panels. Biul. stroi. tekh. 13 no.9:9-10 S '56.
(MLRA 9:11)

1. Nauchno-issledovatel'skiy institut Stroytekhniki Akademii Stroitel'stva i arkhitektury SSSR.
(Hollow brick, tile, etc.)

TAMARIN, A.A., kand. tekhn. nauk

Performance of reinforced concrete elements subjected to multiple repeated loads ("Testing the performance of bent reinforced concrete elements subjected to multiple repeated loads" by I.A. Matarov. Reviewed by A.A. Tamarin). Transp. stroi. 8 no.1:32 Ja '58. (MIRA 12:12)

(Girders--Testing) (Matarov, I.A.)

TAMARIN, A.A., kand.tekhn.nauk

Using prestressed reinforced concrete. Nov. tekh. i pered. op. v stroi. 20 no.3:31-3 of cover M '58. (MIRA 11:3)
(Precast concrete construction)

TAMARIN, A.A., kand.tekhn.nauk, nauchnyy red.; GORCHAKOV, A.V., otv.red.; ROTGOL'TS, E.A., tekhn.red.

[Investigating and calculating losses caused by friction in prestressed reinforced-concrete construction elements with post-tensioned reinforcements; collection of articles] Issledovanie i raschet poter' ot treniia v prednapriazhennykh zhelezobetonnykh konstruktsiiakh s armaturoi, natianutoi na beton; sbornik statei. Pod nauchnoi red. A.A.Tamarina. Moskva, 1959. 66 p. (MIRA 14:1)

1. TSentral'noye byuro tekhnicheskoy informatsii.
(Prestressed concrete)

14(10) SOV/98-59-2-6/22

AUTHOR: Tamarin, A.A., Candidate of Technical ~~Sciences~~

TITLE: Pre-Stressed Reinforced Concrete (Predvaritel'no napryazhennyy armobeton) - For Discussion Purposes (V poryadke obsuzhdeniya)

PERIODICAL: Gidrotekhnicheskoye stroitel'stvo, 1959, Nr 2, p 25-30 (USSR)

ABSTRACT: The structural strength of pre-stressed reinforced concrete structures is warranted both by the resistance of the expanded concrete and the expanded reinforcement. The author proposes a method of calculating these factors, which will realize a savings of 35% in steel together with a 38% increase in the safety factor. The analytical and

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14(10) SOV/98-59-2-6/22

Pre-Stressed Reinforced Concrete

graphic calculations are described in detail. There is 1 table, 1 graph, 1 diagram, and 9 Soviet references.

Card 2/2

TAMARIN, Aleksandr Abramovich; KOBISHCHANOV, V.N., inzh., red.

[Basic regulations concerning field tests of large prestressed concrete elements] Osnovnye polozheniia po polevym ispytaniiam krupnorazmernykh predvaritel'no napriazhennykh zhelezobetonnykh konstruktsii. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1961. 20 p. (MIRA 14:12)

1.Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. Byuro tekhnicheskoy informatsii.
(Prestressed concrete--Testing)

TAMARIN, A.A., kand. tekhn. nauk. Prinimali uchastiye: VOLLEYDT, A.N., mlad. nauchnyy sotr.; POPOVA, N.A., mlad. nauchnyy sotr.; MASLOBOYSHCHIKOV, A.N., inzh.; KUDINOV, A.I.; PIROZHNIKOV, L.B.; SHITOVA, L.N., red. izd-va; SHERSTNEVA, N.V., tekhn. red.

[Instructions for production testing of large prestressed concrete elements]Ukazaniia po proizvodstvennym ispytaniiam krupnorazmernykh predvaritel'no napriazhennykh zhelezobetonnykh konstruktsii. Moskva, Gosstroiizdat, 1962. 128 p. (MIRA 15:9)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Rukovoditel' gruppy ispytaniy Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for Tamarin).
(Prestressed concrete—Testing)

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AUTHORS: Borodulya, V. A., Tamarin, A. I.

TITLE: Use of an instantaneous heat source for studying the particle agitation in a pseudo-fluidized bed

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 5, no. 11, 1962, 101 - 104

TEXT: The pseudo-fluidized bed is assumed to consist of two ideal fluids, one of which is a pseudo-fluidized gas moving upward and the other being the particles to be agitated. This idealized fluid has an effective thermal diffusivity coefficient characterized by the diffusion of the particles in the bed. If hot particles exist in a cold gas the Fourier-Kirchhoff equation $\frac{\partial\theta}{\partial\tau}+(w\,\mathrm{grad}\,\theta)=A\nabla^2\theta-\frac{\alpha F}{c_м\gamma_м}(\theta-t)$, (1) holds for the particles and the Fourier-Kirchhoff equation

$$\frac{\partial t}{\partial\tau}+(u\,\mathrm{grad}\,t)=a\nabla^2 t+\frac{\alpha F}{c_в\gamma_в}(\theta-t). \quad (2)$$

holds for the pseudo-fluidized gas. These two equations lead to

$$\frac{\partial\theta}{\partial\tau}=A\nabla^2\theta-\left[\frac{\partial t}{\partial\tau}+(u\,\mathrm{grad}\,t)-a\nabla^2 t\right]\frac{c_в\gamma_в}{c_м\gamma_м}. \quad (3)$$

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Use of an instantaneous heat ...

for w = 0 (no directed particle motion). Since $c_{B}\gamma_{B}/c_{M}\gamma_{M}$ is approximately equal to 0.005 if the gas is pseudo-fluidized, equation (3) can be replaced by $\partial\theta/\partial\tau = A\nabla^2\theta$ (4). Hence it follows that the thermal diffusivity coefficient is numerically equal to the diffusion coefficient of the particles in a pseudo-fluidized bed. With an instantaneous heat source, (4) has the known solution

$$\theta_{(x,y,z,\tau)} - \theta_0 = \frac{b}{(2\sqrt{\pi A\tau})^3}\exp\left[-\frac{x^2+y^2+z^2}{4A\tau}\right] \quad (5).$$

The correctness of the approximation made here was checked by an experimental arrangement consisting of a glass tube (175 mm in diameter, 1.5 m high) into which air was blown from below through a grating. A known quantity of particles heated to a certain temperature was led into the fluidized bed through a quartz tube inserted into the glass tube from above. The position of this quartz tube could be varied. The thermal diffusivity in the vertical and the horizontal direction was measured with two chromium-nickel thermocouples. Thermal diffusivity in the vertical direction was higher, by almost one order of magnitude, than in the horizontal direction and increased with the gas velocity. There is 1 table.

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Use of an instantaneous heat ... S/170/62/005/011/007/008
B104/B102

ASSOCIATION: Energeticheskiy institut AN BSSR, g. Minsk (Power Engineering Institute AS BSSR, Minsk)

SUBMITTED: July 4, 1962

Card 3/3

TAMARIN, A.I.; BORODULYA, V.A.

Thermal diffusivity (mixing of particles) of a fluidized bed baffled by screens. Inzh.-fiz. zhur. 6 no.11:26-31 N '63. (MIRA 16:11)

1. Institut teplo- i massoobmena AN BSSR, Minsk.

TAMARIN, A.I.

Selecting the number of stages of a fluidized-bed multistage heat exchanger. Inzh.-fiz. zhur. 6 no.4:88-91 Ap '63. (MIRA 16:5)

1. Institut teplo- i massoobmena AN BSSR, Minsk.
(Heat exchangers) (Fluidization)

TAMARIN, A.I.

Self-oscillations arising in a pseudofluidized bed. Inzh.-fiz. zhur. 6 no.7:19-25 Jl '63. (MIRA 16:9)

1. Institut teplo- i massoobmena, Minsk.
(Fluidization) (Oscillations)

BORODULA, V. A.; TAMARIN, A. I.; IODITSKIY, V. I.; ZABRODSKIY, S. S.

"Investigation of the hydrodynamics and of thermal diffusivity in fluidized systems."

paper submitted for 2nd All-Union Conf on Heat and Mass Transfer, Minsk, 4-12 May 1964.

Inst of Heat and Mass Transfer, AS BSSR, Minsk.

TAMARIN, A.I.

Thermal calculation of a fluidized bed with cross flow of gas and material. Inzh.-fiz. zhur. 7 no.5:18-22 My '64. (MIRA 17:6)

1. Institut teplo- i massoobmena AN BSSR, Minsk.

BORODULYA, V.A.; TAMARIN, A.I.

Investigating the effective thermal diffusivity of a fluidized bed. Inzh.-fiz. zhur. 7 no.12:8-12 D '64 (MIRA 18:2)

1. Institut teplo- i massoobmena AN BSSR, Minsk.

DUNAYSKIY, V.D., red.; ZABRODSKIY, S.S., red.; TAMARIN, A.I., red.

[Heat and mass exchange in dispersion systems] Teplo- i massoobmen v dispersnykh sistemakh. Minsk, Nauka i tekhnika, 1965. 175 p. (MIRA 18:5)

1. Akademiya navuk BSSR, Minsk. Institut teplo- i massoobmena.

BORODULIYA, V. A.; TAMARIN, A. I.; YUDITSKIY, V. I.; ZABRODSKIY, S. S.

"Investigation into hydrodynamics and thermal diffusivity of a fluidized bed."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Inst of Heat & Mass Transfer, AS BSSR.

TAMARIN, A.I.

Laws governing the instantaneous propagation of a thermal pulse in a fluidized bed. Inzh.-fiz. zhur. 10 no.1:72-77 Ja '66. (MIRA 19:2)

1. Institut teplo- i massoobmena AN BSSR, Minsk. Submitted April 10, 1965.

TAMARIN, A. L., N.N. GINSBURG, and V.M.PUTIMOV

"Serum Medium as a Diagnostic of Anthrax Variants," pages 93-101 of the book Anthrax STI, Moscow, 1946

Vaccine

TAMARIN, A. L. and CHALTSOV, I. A.

"Pathomorphology and Bacteriology of the Immunization Process with Anthrax Vaccine STI," pages 114-141 of the book Anthrax STI, Moscow, 1946

Vaccine

TAMARIN, A. L., N. F. KOPYLOV, N. N. GINSBURG, and R. A. SALTYKOV

"The Question of Stability of the Basic Biological Features of Anthrax Vaccine Strain STI-I," pages 142-152 of the book Anthrax STI, Moscow, 1946

Vaccine

TAMARIN, A. L. and SPITSYN, N. A.

"Production of Anthrax Vaccine STI," pages 153-170 of the book Anthrax Vaccine STI, Moscow, 1946

TAMARIN, A. L.

"Virulent and Immmogenic Characteristics of Strain STI-I According to Data of Observations in 1945," pages 184-187 of the book Anthrax Vaccine STI, Moscow, 1946

IVASHKEVICH, P.A.; MIKHAYLOV, B.Ya.; ROZHKOV, G.I.; TAMARIN, A.L.

Determination of spore concentration in STI anthrax vaccine with the aid of an optic bacterial standard. Zhur.mikrobiol.epid. i immun. 30 no.1:36-37 Ja '58. (MIRA 12:3)

(ANTHRAX, immunol.
vaccine, determ. of spores with optic bact. standard (Rus))

ALEKSANDROV, N.I., general-mayor meditsinskoy sluzhby; GEFEN, N.Ye., polkovnik meditsinskoy sluzhby; GARIN, N.S., podpolkovnik meditsinskoy sluzhby; GAPOCHKO, K.G., podpolkovnik meditsinskoy sluzhby; SERGEYEV, V.M., podpolkovnik meditsinskoy sluzhby; TAMARIN, A.L., polkovnik meditsinskoy sluzhby; SHLYAKHOV, E.N., kand.med.nauk

Experience in massive aerogenic vaccination against anthrax. Voen.-med.zhur. no.8:23-32 Ag '59. (MIRA 12:12)
(ANTHRAX, immunology)
(VACCINATION)

IVASHKEVICH, P.A.; MIKHAYLOV, B.Ya.; ROZHKOV, G.I.; TAMARIN, A.L.

Determining the viability of spores in anthrax STI vaccine by means of microcultures. Zhur.mikrobiol.epid.i immun. 30 no.10:72-75 O '59. (MIRA 13:2)

(ANTHRAX immunol.)
(VACCINES)

IVASHKEVICH, P.A.; MIKHAYLOV, B.Ya.; ROZHKOV, G.I.; TAMARIN, A.L.

On the potency period and methods for the control of STI anthrax vaccine. Zhur.mikrobiol.,epid.i immun. 30 no.11:45-47 N '59. (MIRA 13:3)

(ANTHRAX immunol.)
(VACCINES)

MIKHAYLOV, B.Ya.; ROZHKOV, G.I.; TAMARIN, A.L.

Rapid method for the diagnosis and identification of anthrax pathogens. Zhur.mikrobiol.epid.i.immun. 31 no.11:10-15 N '60. (MIRA 14:6)

(ANTHRAX)

TAMARIN, A.M.

SUBJECT: USSR/Welding 135-5-5/14

AUTHORS: Tamarin, A.M., Engineer, Gitlevich, A.D., Engineer, and Krivenko, N.M., Engineer.

TITLE: Automatic Butt-Welding of Beams for Overhead Traveling Cranes (Avtomaticheskaya svarka stykov poyasov i stenok glavnykh balok mostovykh kranov).

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 5, pp 16-18 (USSR)

ABSTRACT: The article mentions that presently most crane-building plants manufacture the main beam elements by manual welding which considerably delays work. In order to speed up crane production and to improve production quality, the All-Union Institute for Projecting and Technology (ВПТИ МТМ), in co-operation with the Leningrad Hoisting and Transport Equipment plant imeni Kirov, developed a mechanized technology of producing main beam elements. The new installation (shown in illustrations) for automatic welding under flux consists of four major components: a bed, a movable pneumatic flux pad, a carriage, and a welding tractor of the "АДС-1000-2" type. It accommodates beam elements for cranes of 30 to 100 t capacity and a span of 10 to 32 m. The

Card 1/2

135-5-5/14

TITLE: Automatic Butt-Welding of Beams for Overhead Traveling Cranes (Avtomaticheskaya svarka stykov poyasov i stenok glavnykh balok mostovykh kranov).

The flux pad is placed under the butt joint to be welded, and the flux thrust upward to the butt by feeding air into a hose placed under the flux. The flux pad travels on a pair of rails under the bed. A cross beam is used for moving the workpiece.

The new technology reduces to one half the amount of required work as compared to the old technique.

The article contains 2 drawings, 2 photographs, and 1 table.

ASSOCIATION: ВПТИ МТМ (VPTI MTM) and Zavod podyemno-transportnogo oborudovaniya imeni Kirova (Leningrad Hoisting and Transport Equipment Plant imeni Kirov).

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress.

Card 2/2

TAMARIN, A. M.

135-58-5-14/17

AUTHORS: Gitlevich, A.D., Tamarin, A.M., and Krivenko, N.M. Engineers

TITLE: Edger for Welding Large Overhead Traveling Crane Trolley Frames (Kantovatel' dlya svarki krupnogabaritnykh ram telezhek mostovykh kranov)

PERIODICAL: Svarochnoye Proizvodstvo, 1958, Nr 5, pp 41 - 43 (USSR)

ABSTRACT: The described edger - designed by Vsesoyuznyy proyektno-tekhnicheskiy institut tyazhëlogo mashinostroyeniya (All-Union Technologic-Design Institute of Heavy Machine-Building) and produced at the Leningrad Materials-Handling-Machine Plant imeni Kirov - edges a frame 90° and 180° into positions handy for welding in 45 to 50 seconds (compared with 20-30 min needed with old technology) and is provided with sets of hinged clamps for frames of different sizes. Coming into new position after a 90° or 180° tilt, the frame automatically actuates electric limit switches which switch off the drive and actuate the brake. Detailed design and operation description is illustrated by drawings and photographs. The edger was tested in shop conditions and accepted for use.

Card 1/2 There are 5 figures.

135-58-5-14/17

Edger for Welding Large Overhead Traveling Crane Trolley Frames

ASSOCIATION: VPTI tyazhëlogo mashinostroyeniya (All-Union Technological-Design Institute of Heavy Machine Building), Zavod pod"yëmno-transportnogo oborudovaniya imeni Kirova (Lifting and Transportation Equipment Plant imeni Kirov)

AVAILABLE: Library of Congress

Card 2/2

SOV/122-58-7-26/31

AUTHORS: Krivenko, N.M., ~~Tamarin~~, A.M. and Gitlevich, A.D., Engineers

TITLE: The Adoption of Standardised Production Procedures in the Welding Shops for Small Batch and Single Unit Manufacture (Vnedreniye tipovoy tekhnologii v svarochnykh tsekhakh melkoseriynogo i yedinichnogo proizvodstva)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 7, pp 75-79 (USSR)

ABSTRACT: A system of classification for typical manufacturing sequences in making the fabricated components for bridge cranes has been developed by the VPTI (All-Union Design and Production Institute) in co-operation with the Leningradskiy zavod pod'yemno-transportnogo oborudovaniya (Leningrad Works for Lifting and Conveying Equipment) imeni Kirova. The planning department issues to the shops rate-fixing information or operations cards compiled on the basis of standardised manufacturing processes. This information is stated on a classification card accompanied by an operations card. The former states the class of components as "sheet-metal components" - the group as "flat, rectangular-shaped" and the sub-group as "without holes or cut-outs". Each component is listed with its drawing number, designation, material, weight

Card1/2

The Adoption of Standardised Production Procedures in the Welding Shops for Small Batch and Single Unit Manufacture

and overall size. The row for each component is continued into the operations card where each operation occupies a group of columns. The main column is the rated time allotted to the operation. In each operation, reference is made to a special table in the classification system. The complete system consists of 3 classes, 17 groups, 50 sub-grcups, 124 species and 2 017 components and is listed in 180 classification cards. The work on component standardisation succeeded in eliminating 433 separate components. The system covers 88 different types and sizes of cranes. Each typical production procedure contains the basic manufacturing scheme for sub-assemblies (example shown in Table 2), a representative sketch, an operations card without rates (Table 3), a rate-fixing card (Table 4), a labour charge sheet by trades, a materials schedule and a welded seam length schedule. It is claimed that substantial savings in labour have been achieved. There are 1 figure and 5 tables.

ZAVODCHIKOV, Dmitriy Arsen'yevich; TAMARIN, D.N., prof., retsenzent; DUBASOV, A.A., inzh., red.izd-va; EL'KIND, V.D., tekhn. red.

[Hoisting machinery] Gruzopod"emnye mashiny] Izd.4 2., perer. i dop. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 312 p. (MIRA 14:8)

(Hoisting machinery)

TAMARIN, IOSIF ISAYEVICH

KOGAN, Kopel' Borisovich; TAMARIN, Iosif Isayevich; ARZAMASOV, N.A., otvetstvennyy redaktor; MADRINSKAYA, A.A., tekhnicheskiy redaktor

[BV and BVu boring machines; a brief description of their construction and results of industrial testing] Burovye stanki BV i BVu; kratkoe opisanie konstruktsii i rezul'tatov promyshlennykh ispytanii. Moskva, Ugletekhizdat, 1957. 30 p. (MLRA 10:7)
(Boring machinery)

TAMARIN, I., inzhener; TARASENKO, V., inzhener.

New drills for boring degasification holes. Mast.ugl. 6 no.2:17 F '57. (MLRA 10:4)

(Boring machinery)
(Mine gases)

KOGAN, Kopel' Borisovich; TAMARIN, Iosif Isayevich; FEYGIN, L.M., otv.red.; ABARBARCHUK, F.I., red.izd-va; SHKLYAR, S.Ya., tekhn.red.

[BVu boring machine] Burovoi stanok BVu. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 93 p. (MIRA 13:11)

(Boring machinery)

KOGAN, Kopel' Borisovich; TAMARIN, Iosif Isayevich; VASIL'CHENKO, Vitaliy Konstantinovich; FEYGIN, L.M., otv. red.; ABARBARCHUK, F.I., red.izd-va; LOMILINA, L.N., tekhn. red.; LAVRENT'YEVA, L.G., tekhn. red.

[BMP mining machine] Prokhodcheskaia mashina BMP. Moskva, Gosgortekhizdat, 1963. 46 p. (MIRA 16:5)
(Shaft sinking—Equipment and supplies)

TAMARIN, I. L.

Tamarin, I. L. "The struggle against children's tuberculosis in the BSSR", In the collection: Doklady Vsebelorus. resp. soveshchaniya pediatrov i akusherov ginekologov, (28-30 November, 1946), Minsk, 1949, p. 106-22.

SO: U-411, 17 July 1953, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949)

1. TAMARIN, Prof. I. L.

2. USSR (600)

4. Meningitis

7. One of the early symptoms in tubercular meningitis. Klin.med. 30 no. 10, 1952.

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

TAMARIN, I.L., professor

Blood plasma substitutes in the clinical treatment of tuberculosis. Probl.tub. 34 no.6 supplement: 5-6 N-D '56. (MLRA 10:2)

1. Zaveduyushchiy kafedroy tuberkuleza Minskogo gosudarstvennogo meditsinskogo instituta.

(TUBERCULOSIS, therapy,
plasma substitutes (Rus))
(PLASMA SUBSTITUTES, therapeutic use
tuberc. (Rus))

POLISSKIY, N.Ya., inzhener; GONTOVENKO, N.P., inzhener; TAMARIN, L.I., inzhener; CHIRKOV, Ye.V., inzhener; AVRAMENKO, P.S., inzhener.

Mechanization and automation of the varnish insulation section in the line for continuous manufacturing of armatures for direct current machines. Vest.elektroprom. 27 no.11:5-14 N '56. (MLRA 9:12)

1. Kharkovskiy Elektromekhanicheskiy zavod.
(Armatures) (Electric insulators and insulation)
(Automatic control)

TAMARIN, L.I.

AUTHORS: Polisskiy, N.Ya., Gontovenko, N.P. and Tamarin, L.I., (Engineers).

TITLE: Modernisation of the control of hydraulic presses for plastics. (Modernizatsiya upravleniya gidropressami dlya plastmass). 110-7-22/30

PERIODICAL: "Vestnik Elektropromyshlennosti" (Journal of the Electrical Industry), Vol.28, No.7, 1957, pp.66-69 (USSR).

ABSTRACT: One method of increasing the output of hydraulic presses is to replace manual by semi-automatic control. The hydraulic circuit of a 100 ton press provided with semi-automatic control is illustrated in Fig.1 which also gives a table of valve positions at different times in the operating cycle. Fig.2 illustrates the construction of a valve the operation of which is based on that of the so-called floating valve. The principles of operation of the valve are described. The operation of the automatic circuit is also described. A special procedure is adopted to slow down the press just before it closes on the tool. The electrical circuit of the equipment is given in Fig.3. With semi-automatic control of the press only two push-buttons are required. All the remaining switching is carried out automatically. The circuit provides reliable

Card 1/2

Modernisation of the control of hydraulic presses for plastics. (Cont.) 110-7-22/30

interlocking. The use of semi-automatic control in the manufacture of hot pressed parts increased the output by some 5% and of cold pressed parts by 20-30%. When semi-automatic equipment is installed the pay-off time is very short. There are less packings in the new design of valves and therefore leakage of high pressure fluid is reduced. This cuts down electric power consumption.

There are 3 figures and 3 tables. There are no references.

ASSOCIATION: Khar'kov Electrical and Mechanical Works. (KEME).

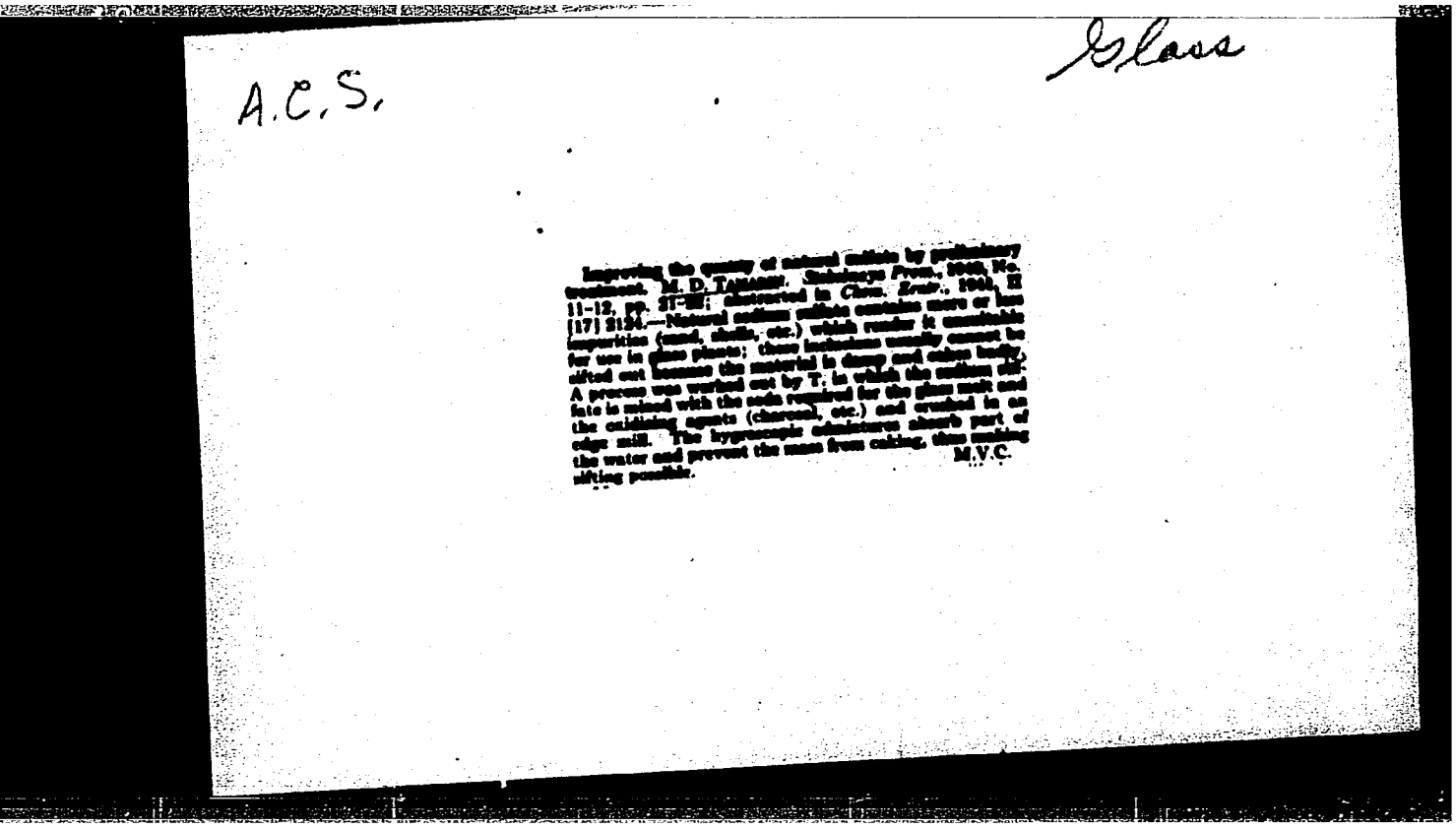
AVAILABLE:

Card 2/2

1 C. S.

Reference No. 2
7

Determination of the temperature distribution in the Dinas partition wall of a coke oven. M. D. TAMARIN. *Koks i Khim.*, 1938, No. 9, pp. 30–33; abstracted in *Journ. Iron & Steel Inst.* [London], 145 [1] 174A (1942).—An approximate heat-flow method of calculation is used to determine temperatures both in the partition wall and in the coke charge at different distances from the heated side and various times after charging. The bearing of the rates of heating and cooling on the life of the Dinas refractory wall is considered.



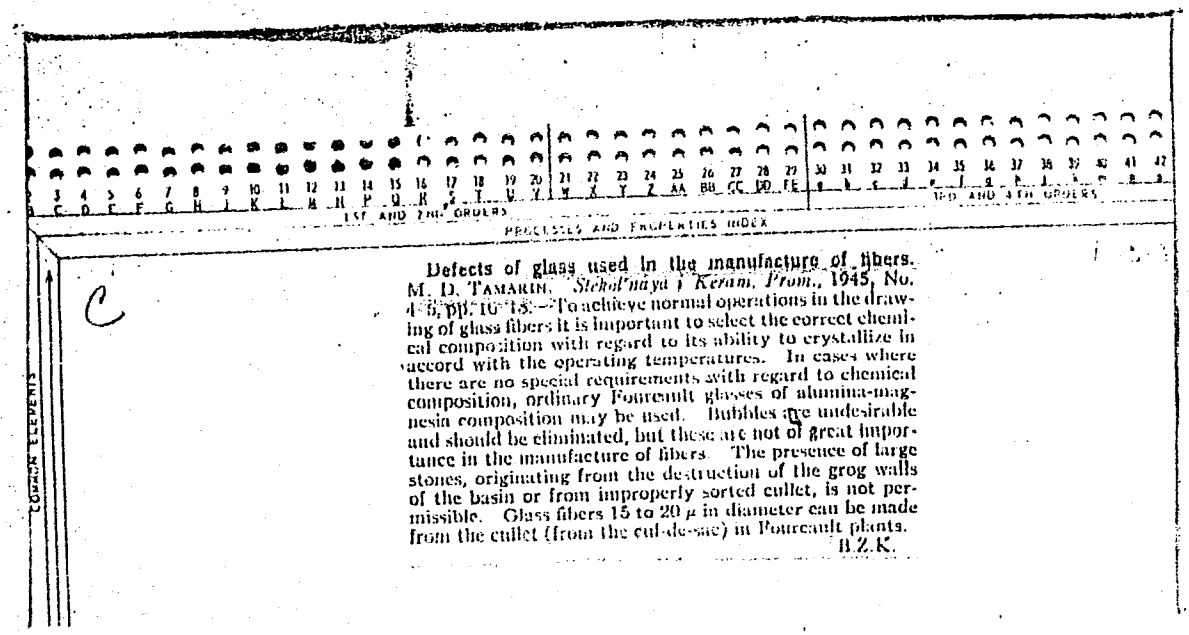
A.C.S.

Glass

Improving the quality of natural sulfate by preliminary treatment. M. D. Tamamyan. *Stekloye Prom.*, 1940, No. 11-12, pp. 27-28; abstracted in *Chem. Zentr.*, 1941, II [17] 3124.—Natural sodium sulfate contains more or less impurities (sand, shells, etc.) which render it unsuitable for use in glass plants; these inclusions usually cannot be sifted out because the material is damp and caking badly. A process was worked out by T. in which the sodium sulfate is mixed with the soda required for the glass melt and the oxidizing agents (charcoal, etc.) and crushed in an edge mill. The hygroscopic admixtures absorb part of the water and prevent the mass from caking, thus making sifting possible.

M.V.C.

TAMARIN, M.D.

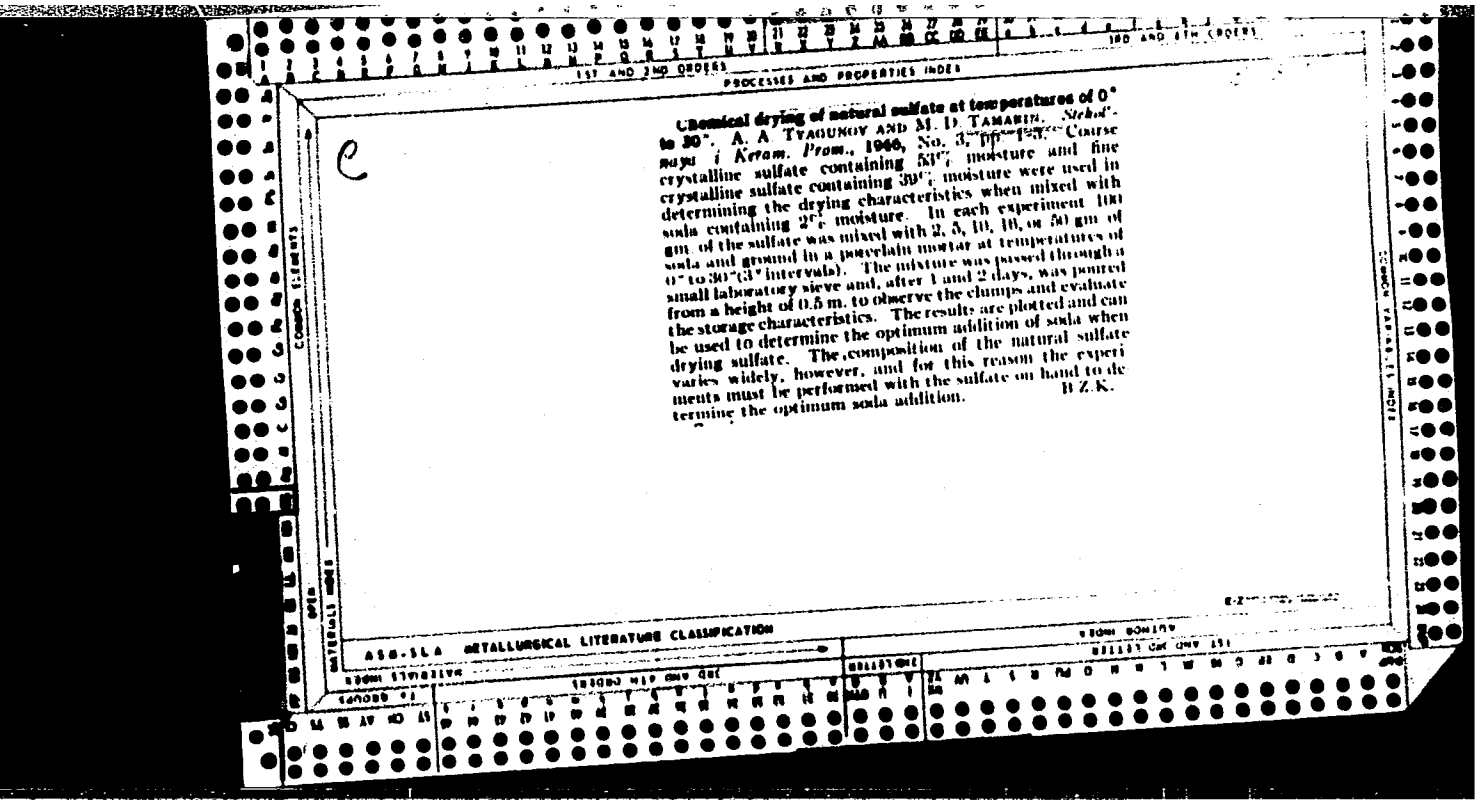


Defects of glass used in the manufacture of fibers. M. D. TAMARIN. *Steklo i Keram. Prom.*, 1945, No. 4-5, pp. 10-15.—To achieve normal operations in the drawing of glass fibers it is important to select the correct chemical composition with regard to its ability to crystallize in accord with the operating temperatures. In cases where there are no special requirements with regard to chemical composition, ordinary Fourcault glasses of alumina-magnesia composition may be used. Bubbles are undesirable and should be eliminated, but these are not of great importance in the manufacture of fibers. The presence of large stones, originating from the destruction of the grog walls of the basin or from improperly sorted cullet, is not permissible. Glass fibers 15 to 20 μ in diameter can be made from the cullet (from the cul-de-sac) in Fourcault plants.

B.Z.K.

TAMARIN, M.D.

Uniformity of glass melt in mechanized production of sheet glass. M. D. TAMARIN. *Steklo i Keram. Prom.*, 1945, No. 7–8, pp. 1–6; No. 9, pp. 1–3; No. 10–12, pp. 1–4.—A study was made of the factors influencing nonuniformity of glass and of means to eliminate it. The problem of allowable deviations of individual oxides in the glass composition was not studied, but provisional recommendations for Fourcault sheet glass are SiO_2, Na_2O 0.3% and CaO, MgO, Al_2O_3 0.2%. Allowable deviations for raw materials are SiO_2 0.405, Na_2CO_3 1.92, $CaCO_3$ 2.18, $MgCO_3$ 2.43, sulfate (20% alkali though sulfate) 3.6, sulfate (100% alkali through sulfate) 1.19%. B.Z.K.



C

Chemical drying of natural sulfate at temperatures of 0° to 30°. A. A. Tyagunov and M. D. Tamarin. *Stekol'naya i Keram. Prom.*, 1946, No. 3, pp. 1-5. Course crystalline sulfate containing 5% moisture and fine crystalline sulfate containing 30% moisture were used in determining the drying characteristics when mixed with soda containing 2% moisture. In each experiment 100 gm. of the sulfate was mixed with 2, 5, 10, 18, or 50 gm. of soda and ground in a porcelain mortar at temperatures of 0° to 30° (3° intervals). The mixture was passed through a small laboratory sieve and, after 1 and 2 days, was poured from a height of 0.5 m. to observe the clumps and evaluate the storage characteristics. The results are plotted and can be used to determine the optimum addition of soda when drying sulfate. The composition of the natural sulfate varies widely, however, and for this reason the experiments must be performed with the sulfate on hand to determine the optimum soda addition. B Z K.

TAMARIN, M.D.

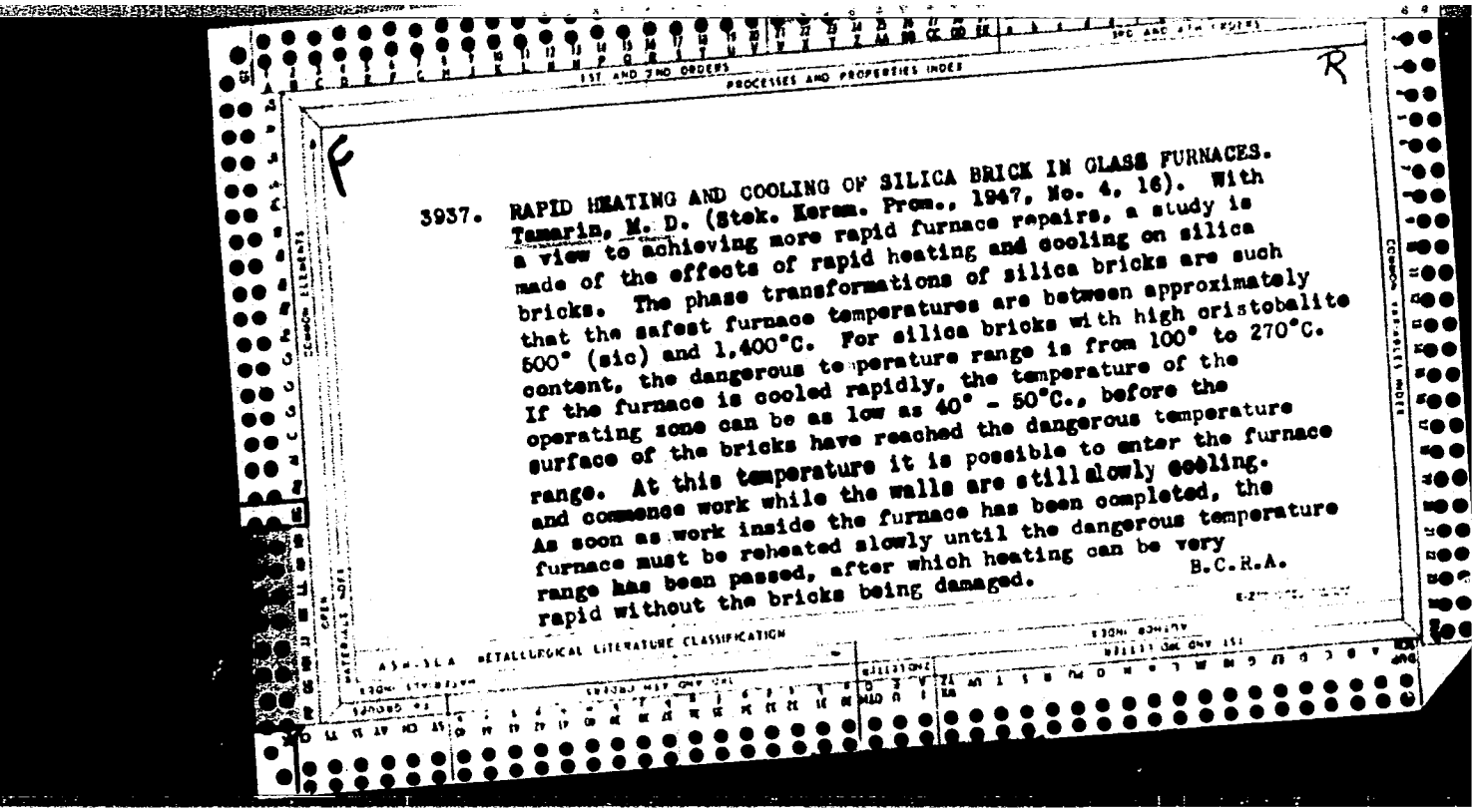
C

Primary flow of the glass mass in the production of sheet glass. M. D. TAMARIN. *Steklo'naya i Keram. Prom.*, 1940, No. 4-5, pp. 5-6. — The author considers as the primary flow that portion of the glass melt which is ready to be shaped into various products 10 to 15 hr. after that portion of the charge has been loaded into the tank furnace. The characteristics of the primary flow were studied from the distribution of coloration in the drawn-out sheets of glass. This method is preferred to that requiring the addition of BaO because it requires no chemical analysis and makes it possible to observe the flow and distribution characteristics of the primary melt from the moment of its appearence to the withdrawal of the sheet. Primary glass melt was observed in the sheets of the central Fourcault machines 10 to 12 hr. after the appearance of colored glass melt in the tank furnace, and 4 to 6 hr. later it was observed in sheets of those following the central machines. Cross sections of the sheet from the central machine showed at first a streak of coloration near the surface, but with time the number of streaks increased, giving the appearance of a solid colored band. About 10 to 15 hr. after the coloration was noted, the colored band of streaks had shifted to the central portion of the cross section. The color intensity, however, had decreased, thus indicating intensive mixing of the primary flow with the remaining glass melt in the tank furnace. After the complete disappearance of the visible coloration, the fracture showed very thin colored streaks which were distributed throughout the cross section. This indicates the inability of each portion of glass to dissolve by diffusion within the glass melt in the tank; the separate portions of glass are mixed only roughly in the furnaces. The sheet was curved both along the width and the length; the concave side was directed toward the center of the channel, but there were cases where the opposite occurred. The curvature of the sheet in Fourcault machines sometimes reached such proportions that the rollers broke the sheet. There was also considerable breakage when the glass was used in making triplex. Cracks in the shape of nets were observed during the cutting of the sheet and also in the mechanical production of bottles. The cracks penetrated only a thin layer of the glass. The increased brittleness, lowered thermal stability, and cracks are due to the inhomogeneity of the glass of the primary flow. In the case of glass having a colored layer near the surface, the network of cracks penetrated the colored layer only. In this case, the defects were caused by the strains between the colored layer and the inner body of the glass; these strains were observed in polarized light.

B.Z.K.

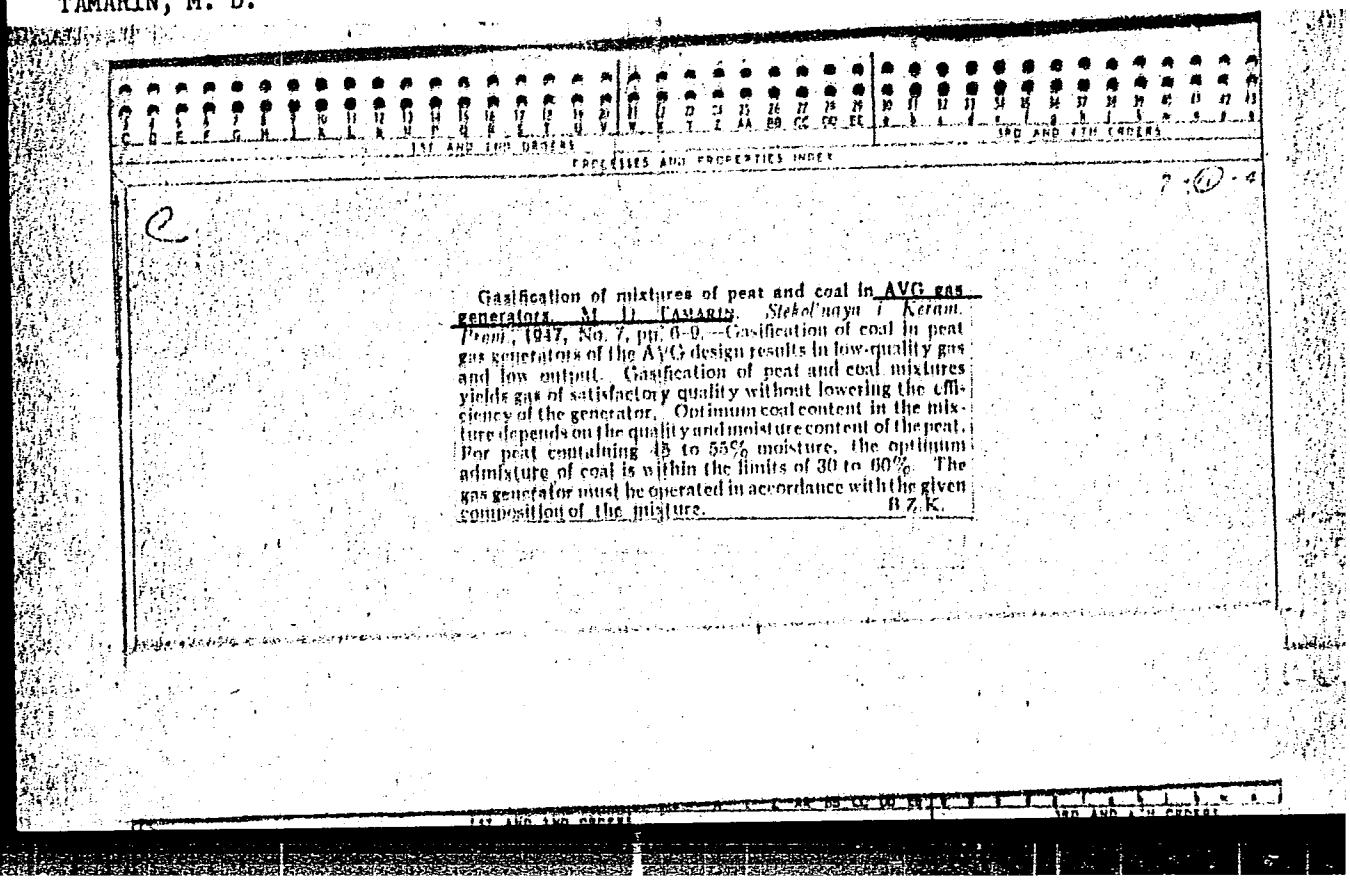
TAMARIN, M. D.

Preparation of charges for sheet glass. M. D. TAMARIN. *Stekol'naya i Keram. Prom.*, 1946, No. 9-10, pp. 1-8.—Three flowsheets are given, showing different methods used in preparing charges for the manufacture of sheet glass. Two variations—with and without beneficiation of the raw materials—are compared. —RZK.



3937. RAPID HEATING AND COOLING OF SILICA BRICK IN GLASS FURNACES. Tamarin, M. D. (Stek. Keram. Prom., 1947, No. 4, 16). With a view to achieving more rapid furnace repairs, a study is made of the effects of rapid heating and cooling on silica bricks. The phase transformations of silica bricks are such that the safest furnace temperatures are between approximately 500° (sic) and 1,400°C. For silica bricks with high cristobalite content, the dangerous temperature range is from 100° to 270°C. If the furnace is cooled rapidly, the temperature of the operating zone can be as low as 40° - 50°C., before the surface of the bricks have reached the dangerous temperature range. At this temperature it is possible to enter the furnace and commence work while the walls are still slowly cooling. As soon as work inside the furnace has been completed, the furnace must be reheated slowly until the dangerous temperature range has been passed, after which heating can be very rapid without the bricks being damaged. B.C.R.A.

TAMARIN, M. D.



1ST AND 2ND ORDERS

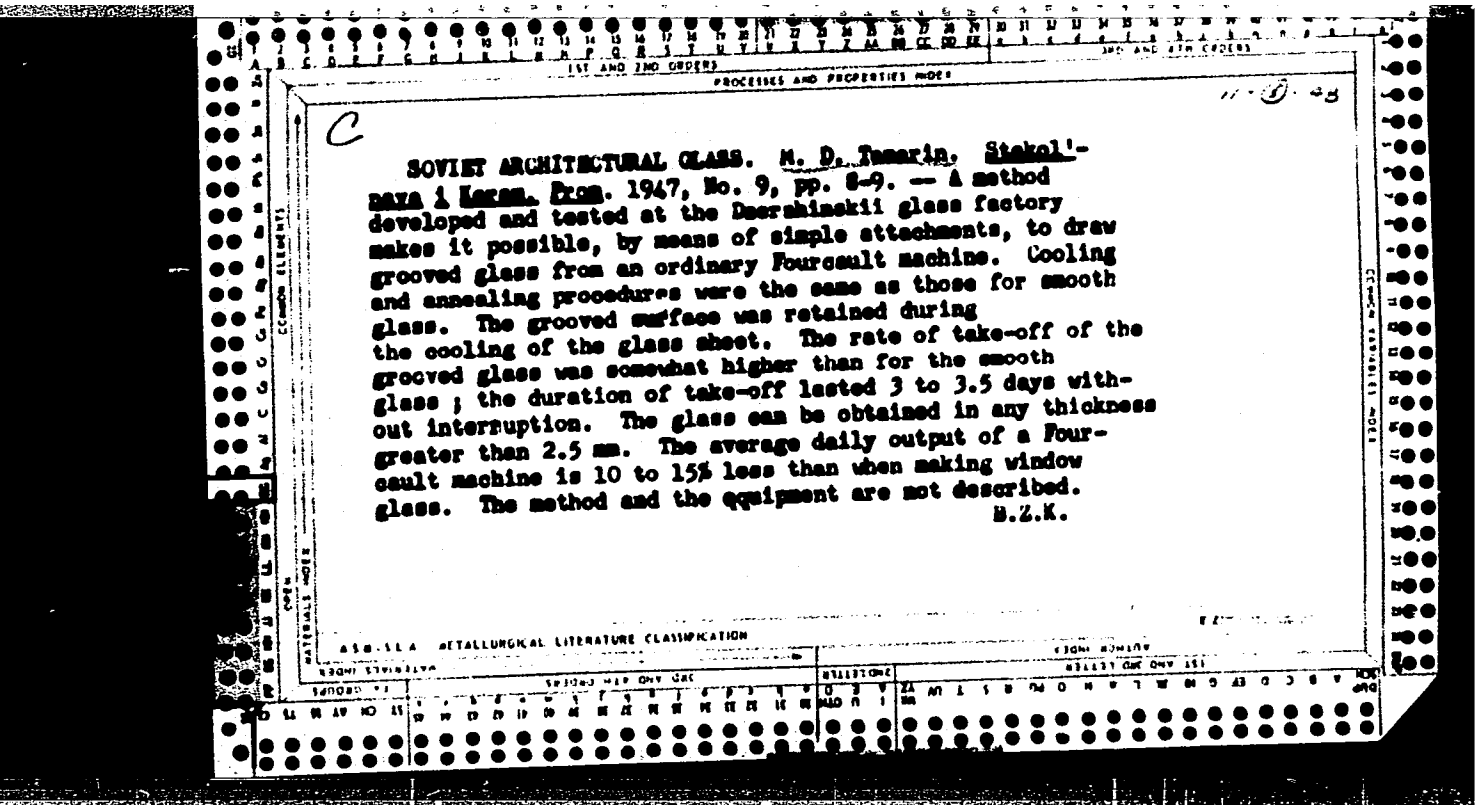
PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

7-(D)-4

C

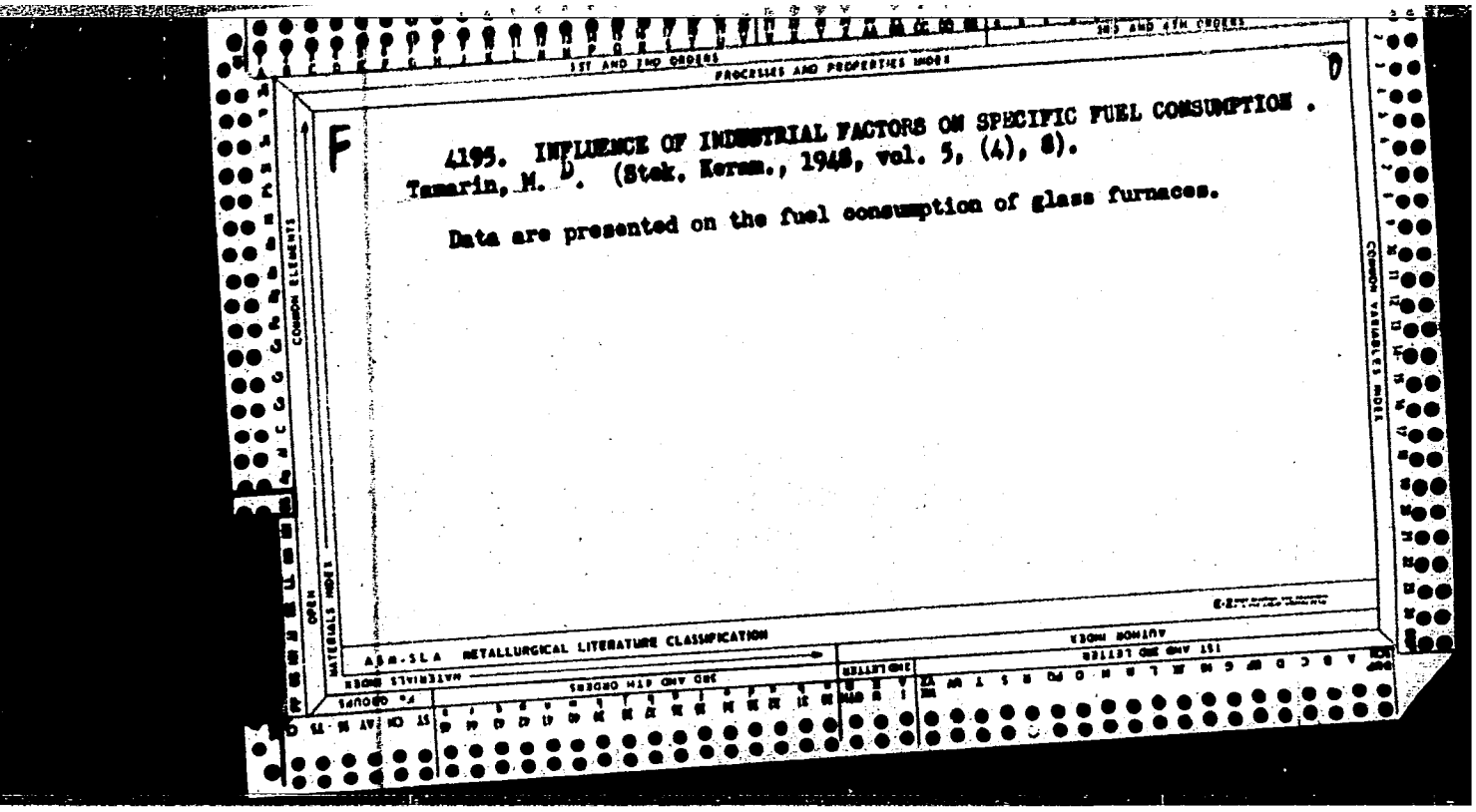
Gasification of mixtures of peat and coal in AVG gas generators. M. D. TAMARIN. *Stekol'naya i Keram. Prom.*, 1947, No. 7, pp. 6-9. --Gasification of coal in peat gas generators of the AVG design results in low-quality gas and low output. Gasification of peat and coal mixtures yields gas of satisfactory quality without lowering the efficiency of the generator. Optimum coal content in the mixture depends on the quality and moisture content of the peat. For peat containing 45 to 55% moisture, the optimum admixture of coal is within the limits of 30 to 60%. The gas generator must be operated in accordance with the given composition of the mixture. B.Z.K.



C

SOVIET ARCHITECTURAL GLASS. M. D. Tumarin. Steklo i Keramika. Prom. 1947, No. 9, pp. 8-9. — A method developed and tested at the Dzerzhinskii glass factory makes it possible, by means of simple attachments, to draw grooved glass from an ordinary Fourcault machine. Cooling and annealing procedures were the same as those for smooth glass. The grooved surface was retained during the cooling of the glass sheet. The rate of take-off of the grooved glass was somewhat higher than for the smooth glass; the duration of take-off lasted 3 to 3.5 days without interruption. The glass can be obtained in any thickness greater than 2.5 mm. The average daily output of a Fourcault machine is 10 to 15% less than when making window glass. The method and the equipment are not described.

B.Z.K.

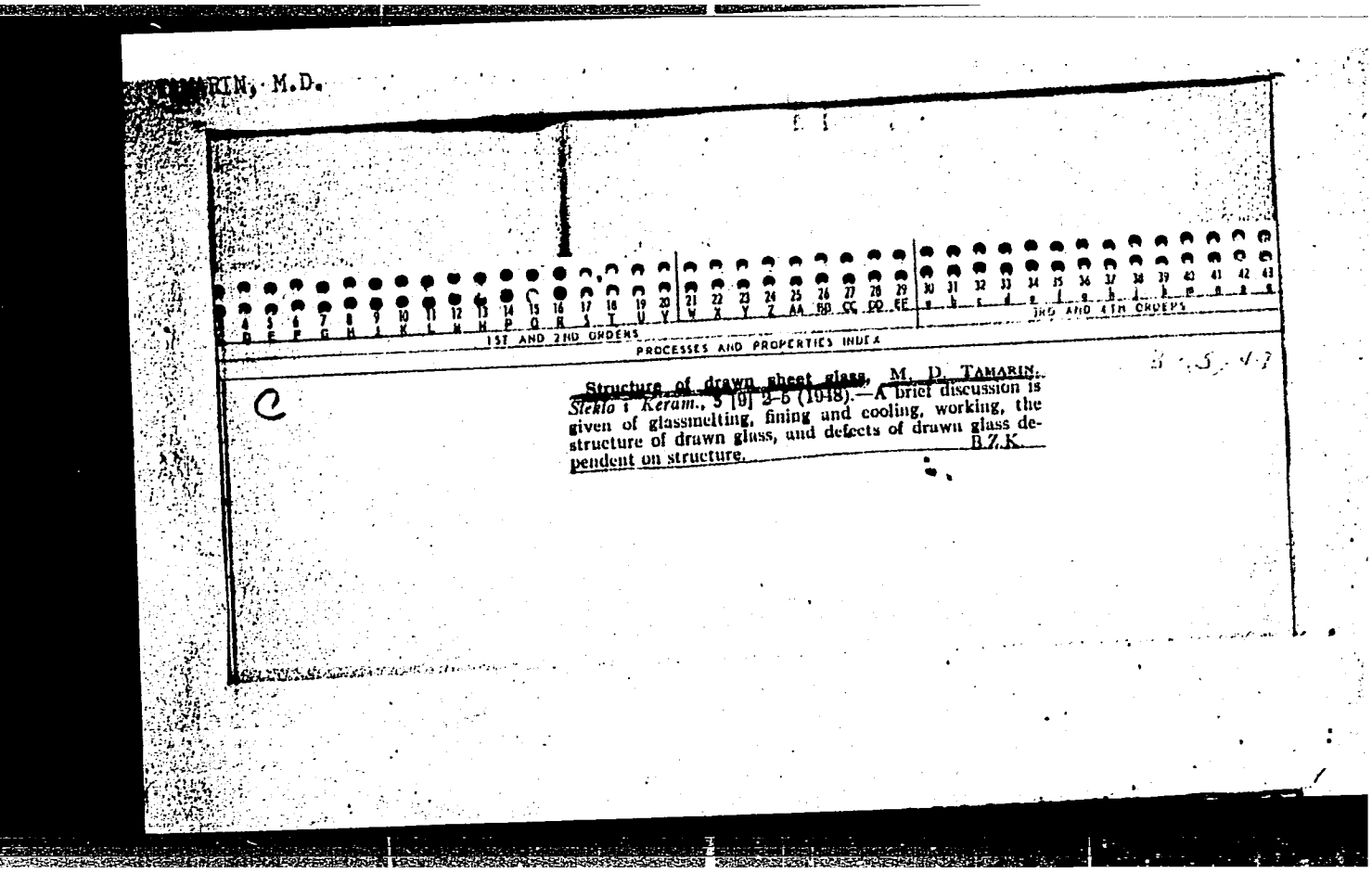


F

4195. INFLUENCE OF INDUSTRIAL FACTORS ON SPECIFIC FUEL CONSUMPTION .
Tamarin, M. D. (Stek. Keram., 1948, vol. 5, (4), 8).

Data are presented on the fuel consumption of glass furnaces.

D



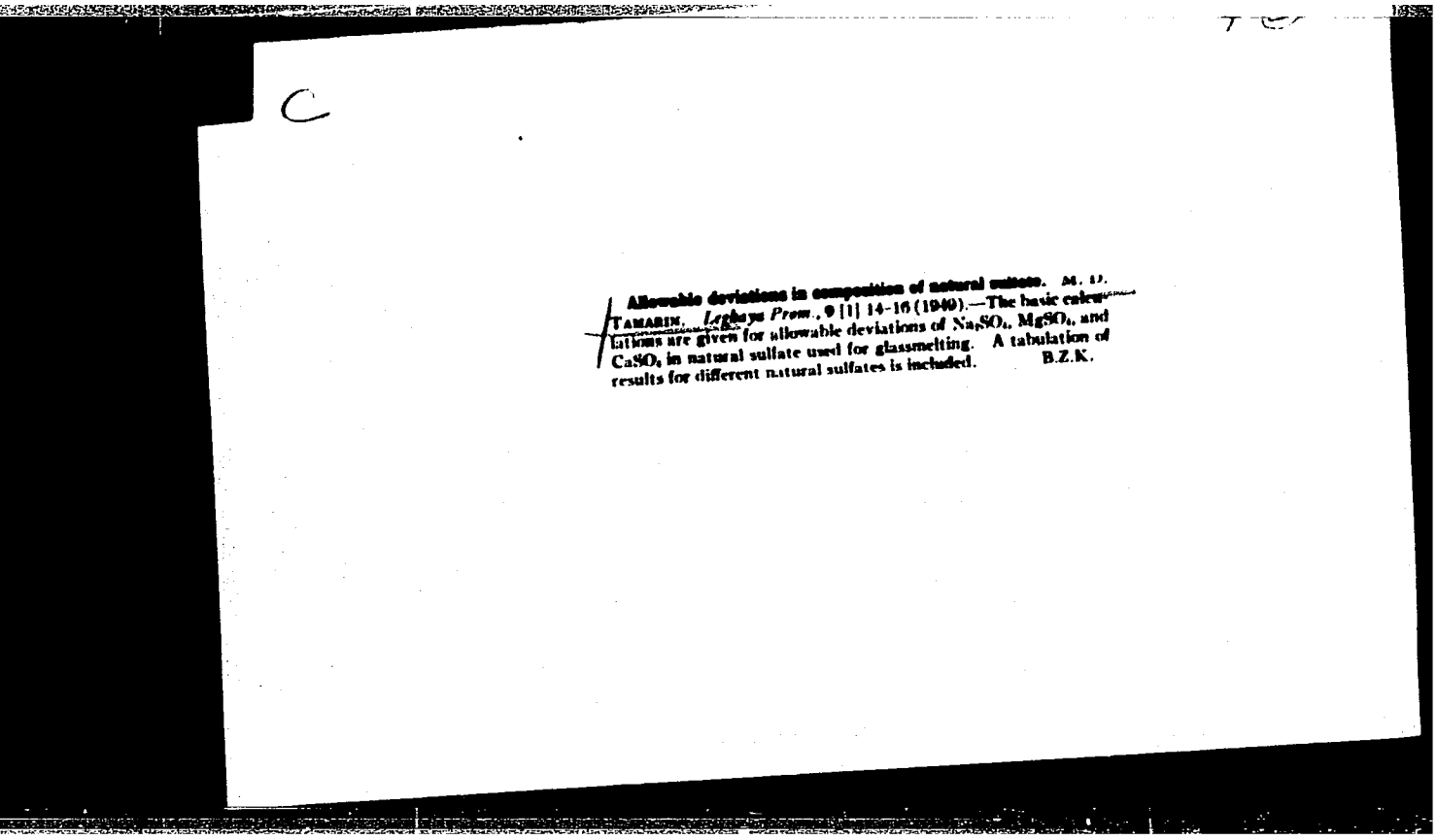
TAMARIN, M.D.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Structure of drawn sheet glass. M. D. TAMARIN. *Steklo i Keram.*, 5 [9] 2–6 (1948).—A brief discussion is given of glassmelting, fining and cooling, working, the structure of drawn glass, and defects of drawn glass dependent on structure. B.Z.K.



Allowable deviations in composition of natural sulfate. M. I. TAMARIN. *Legkaya Prom.*, 9 [1] 14-16 (1940).—The basic calculations are given for allowable deviations of Na_2SO_4, $MgSO_4$, and $CaSO_4$ in natural sulfate used for glassmelting. A tabulation of results for different natural sulfates is included. B.Z.K.

Brit. Abs

BI-9. Glass Ceramics, Refractories

Reconstruction of mixing plant at [illegible] [glass] factory. M. D. Tamarin (*Stek. Keram.*, 1948, No. 5, 9; *Brit. ceram. Abstr.*, 1949, 171 A).—Small-scale diagrams show the unloading bay for incoming raw materials, and details of the drying and storage of sand, the stock-piling of dried materials, and the mixing departments.

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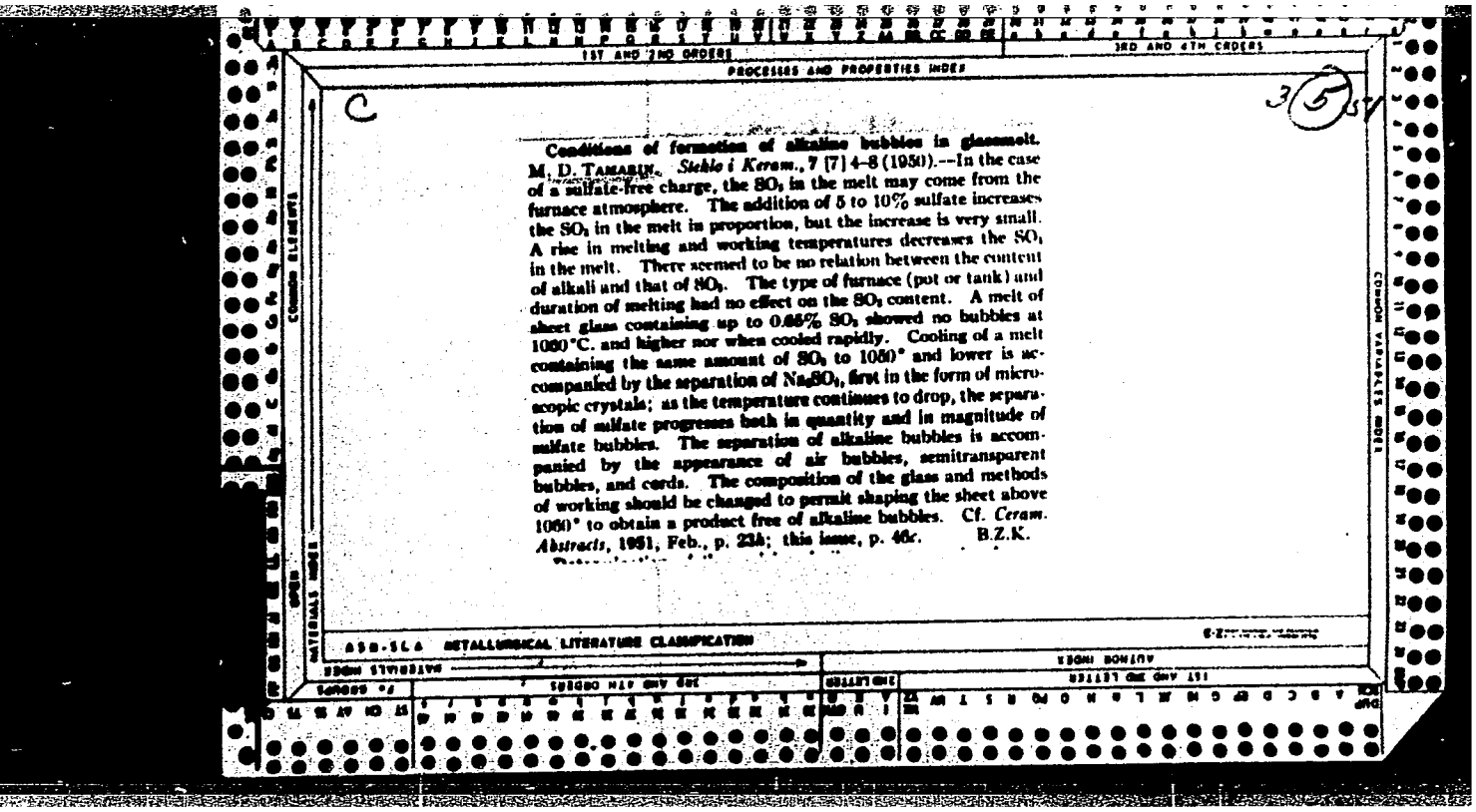


1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

C

3 (5) 57

Conditions of formation of alkaline bubbles in glassmelt. M. D. TAMARIN. *Stekło i Keram.*, 7 [7] 4–8 (1950).--In the case of a sulfate-free charge, the SO_3 in the melt may come from the furnace atmosphere. The addition of 5 to 10% sulfate increases the SO_3 in the melt in proportion, but the increase is very small. A rise in melting and working temperatures decreases the SO_3 in the melt. There seemed to be no relation between the content of alkali and that of SO_3. The type of furnace (pot or tank) and duration of melting had no effect on the SO_3 content. A melt of sheet glass containing up to 0.05% SO_3 showed no bubbles at 1060°C. and higher nor when cooled rapidly. Cooling of a melt containing the same amount of SO_3 to 1050° and lower is accompanied by the separation of Na_2SO_4, first in the form of microscopic crystals; as the temperature continues to drop, the separation of sulfate progresses both in quantity and in magnitude of sulfate bubbles. The separation of alkaline bubbles is accompanied by the appearance of air bubbles, semitransparent bubbles, and cords. The composition of the glass and methods of working should be changed to permit shaping the sheet above 1050° to obtain a product free of alkaline bubbles. Cf. *Ceram. Abstracts*, 1951, Feb., p. 23h; this issue, p. 46c. B.Z.K.

A58-564 METALLURGICAL LITERATURE CLASSIFICATION

TAMARIN, M. D.

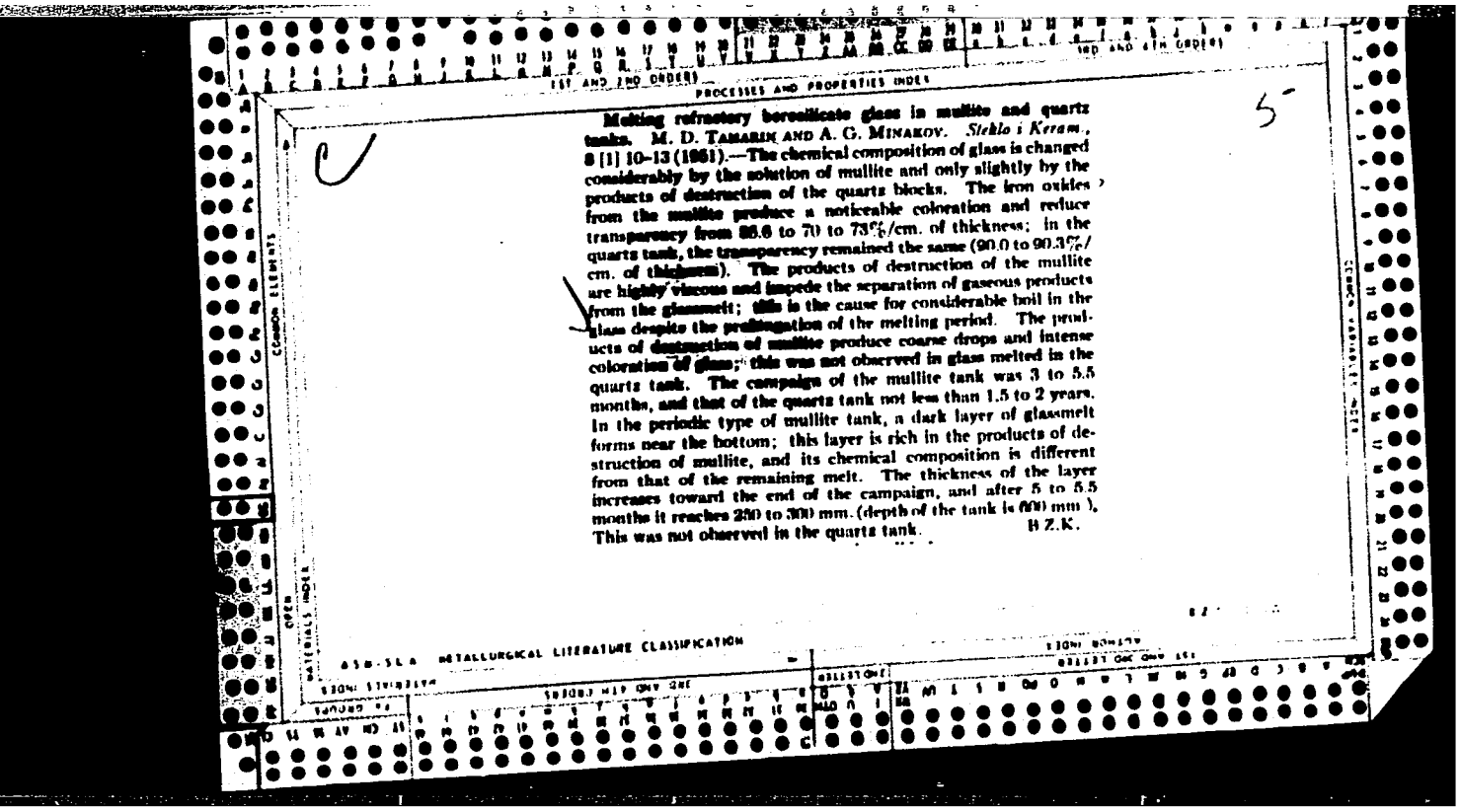
PROCESSES AND PROPERTIES INDEX

C

Structure of continuously rolled sheet glass. M. D. TAMARIN. *Steklo i Keram.*, 7 [1] 13-15 (1950). In the cooling zone of the tank, the melt has a definite structure, usually stratified with the layers in a horizontal position. When differences in the chemical composition of individual layers is insignificant, the structure of the melt is hardly noticeable in the finished shapes. When the differences are considerable and when the glass is discolored, the structure is evidenced by stratification, streaks of cords, etc. Stratification of the melt along the depth of the tank is not uniform. In the upper layers, the glass is rapidly renewed by the high speeds of the "primary flow," the structure is more uniform, and stratification is hardly noticeable. In the lower layers, where the melt moves at low speeds and is renewed after a considerable length of time, the melt is less uniform and the stratification is more distinct. The structure also differs along the width of the tank. A smoother structure, in the form of parallel layers, can be observed in the middle and along the side walls. A more complex structure of the melt along the walls may be due to different conditions of melting, e.g., increased convection currents which produce mixing along the walls. The lamellar structure of the melt in the cooling zone, its subsequent migration in the working canals, and the changes which take place during the forming of the shapes determine, in the final analysis, the structure of the finished product. B.Z.K.

TAMARIN, M.D.

Stability of refractories toward high-melting glass in a tank. M. D. TAMARIN AND A. G. MINAKOV. *Ogneupory*, 15 [10] 466–71 (1950).—The upper row in a periodic tank making high-melting glass was changed to electrocast mullite blocks, interspersed with thermitocorundum, high-alumina, kaolin, and electrocast quartz blocks. The nature of the destruction was studied after a 50-day run. Electrocast mullite proved the least suitable in regard to stability and flaws in the glass. Thermitocorundum and high-alumina refractories showed sufficient resistance but, because of the cavernous destruction of their surface, additional tests should be made to determine flaws in the glass. Kaolin blocks showed high resistance and dissolved uniformly in the melt; they are, to all appearances, satisfactory. Electrocast quartz showed high resistance both in these tests and also in a tank lined entirely with it; glass quality was also high. After 4 months, a tank lined with electrocast quartz was still in satisfactory condition for use. 8 photographs. B.Z.K.



PROCESSES AND PROPERTIES INDEX

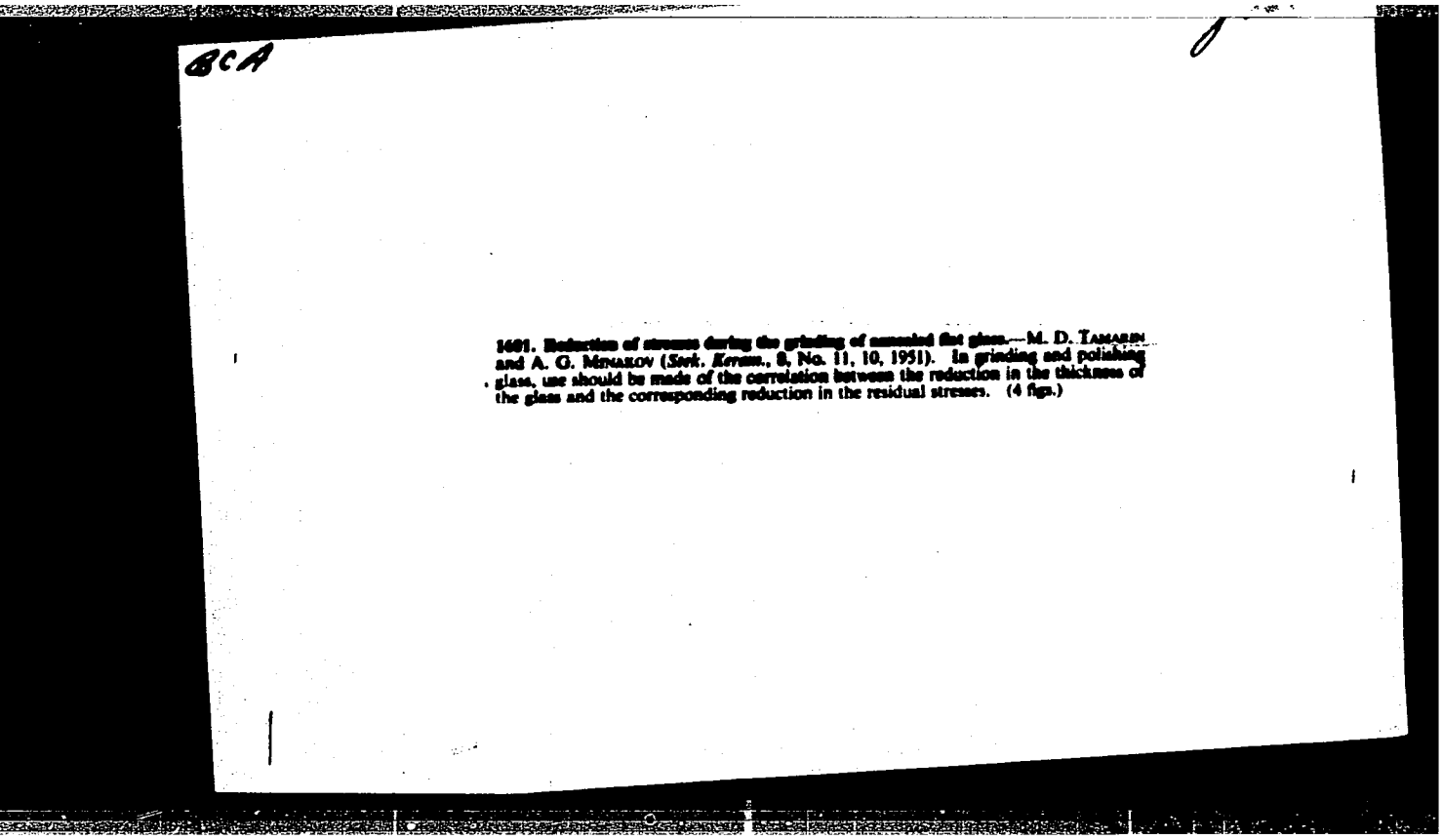
Melting refractory borosilicate glass in mullite and quartz tanks. M. D. TAMARIN AND A. G. MINAKOV. *Stekło i Keram.*, 8 [1] 10–13 (1951).—The chemical composition of glass is changed considerably by the solution of mullite and only slightly by the products of destruction of the quartz blocks. The iron oxides from the mullite produce a noticeable coloration and reduce transparency from 85.6 to 70 to 73%/cm. of thickness; in the quartz tank, the transparency remained the same (90.0 to 90.3%/cm. of thickness). The products of destruction of the mullite are highly viscous and impede the separation of gaseous products from the glassmelt; this is the cause for considerable boil in the glass despite the prolongation of the melting period. The products of destruction of mullite produce coarse drops and intense coloration of glass; this was not observed in glass melted in the quartz tank. The campaign of the mullite tank was 3 to 5.5 months, and that of the quartz tank not less than 1.5 to 2 years. In the periodic type of mullite tank, a dark layer of glassmelt forms near the bottom; this layer is rich in the products of destruction of mullite, and its chemical composition is different from that of the remaining melt. The thickness of the layer increases toward the end of the campaign, and after 5 to 5.5 months it reaches 250 to 300 mm. (depth of the tank is 900 mm.). This was not observed in the quartz tank. H Z.K.

ACA

Coloring oxides in sands. M. D. Tamanes. *Stekło i Keram.*, 8 [6] 10 (1951). The evaluation of sand on the basis of the content of iron oxides alone is inadequate. The use of white sand containing up to 0.03–0.04% Fe_2O_3 resulted in lower light transparency than with ordinary sand of 0.05 to 0.09% FeO. This was traced to the presence of coloring oxides such as Mn and Co. I. B. Sutats. *Ibid.*, pp. 10–11. The detection of coloring oxides, besides Fe_2O_3, should not be used as a basis for rejecting the sand. The content of such oxides should be listed in specifications for sand intended for making technical glass for critical applications only. The whole problem revolves around the ability of works laboratories to improve their analytical procedures and make spectral determinations. R.Z.K.

ACA

Determination of the speed of glass polishing. M. D. Tamarin. *Stekla i Keram.*, 8 [8] 13-14 (1951). The depth of cavities on the surface before and after polishing is determined with a needle mounted on an indicator and the difference between the readings is divided by the duration of the polishing. The details of procedure and a description of equipment are given. It concludes that this method should be refined, a method should be devised to assure measurement of the cavities, and cavities should be thoroughly cleaned of adulterants. B Z L.



BCA

1601. Reduction of stresses during the grinding of annealed flat glass.—M. D. Tamarin and A. G. Mikhailov (*Stek. Keram.*, 8, No. 11, 10, 1951). In grinding and polishing glass, use should be made of the correlation between the reduction in the thickness of the glass and the corresponding reduction in the residual stresses. (4 figs.)

TAMARIN, M.D.

MOSCOW ORDER OF LENIN CHEMICOTECHNOLOGICAL INST IMENI D. I. MENDELEYEV

TAMARIN, M. D. --"STRUCTURE AND HOMOGENEITY OF PLATE GLASS." SUB 7 APR 52, MOSCOW ORDER OF LENIN CHEMICOTECHNOLOGICAL INST IMENI D. I. MENDELEEV (DISSERTATION FOR THE DEGREE OF CANDIDATE IN TECHNICAL SCIENCES)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

USSR/ Engineering - Sodium silicate preparation

Card 1/1 Pub. 104 - 5/12

Authors : Tamarin,M.D.

Title : Mechanized preparation of sodim silicate (silicate blocks)

Periodical : Stek. i ker. 1, 17-19, Jan 1954

Abstract : A completely mechanized system, including machines, converter belts, kilning furnaces and loading arrangements, for the manufacture of Na_2SiO_3 in blocks is described. The economical advantages of such mechanized system are listed . This innovation was first introduced at the Ceramics Plant "Proletariat", in October 1951. Two USSR references (1946-1951). Drawing; illustrations.

Institution: .....

Submitted: .....