

9.4340 (114,160,131)  
13.2930

1960  
U.S. GOVERNMENT PRINTING OFFICE  
14-52 4070

AUTHORS: Labashovskiy, A. V., Petrov, L. A., ~~Shchegolev, M. M.~~  
L. I. Lukashovich, M. I. Kholranskiy, B. I. ~~...~~

TITLE: A Method of Increasing the Breakdown Voltage of Junction-  
Type Silicon Diodes

SYNOPSIS: Sullistat' (abstracts), 1960, No. 12, p. 26

TEXT: Class 216, 1101, No. 129751 (441201) 26 June 1960. This  
method of increasing the breakdown voltage of junction-type silicon diodes  
has the following special features: to simplify the technology of produc-  
tion of the diodes, about 1% gold is introduced into the aluminum, foil  
of a thickness of 0.05-0.1  $\mu$ m is made from the resultant alloy and pressed  
between plates of n and p type silicon, the diode is placed in a vacuum  
and the plates are finally fused at 900-1,000 C.

Card 1/1

БМОУАНОКИУ, Р.УЭ.

В. В. Голубинский,  
А. А. Рубин  
Исследования лазерных диодов III полупроводника

11 июня  
(с 18 до 22 часов)

Н. А. Бузыкин  
Спектры интерференции функции урассовой функции  
триангуляции и неортогональной проекционной системы  
не различают центра логарифма по значению от одной  
координаты

И. П. Кержанова  
Оптимальная форма сигнала выходящая в условиях  
многолучности

Ю. М. Исаев  
Точечные источники Аляскии возбуждают  
волны II. в волновом круге ступени

Р. Б. Казанов  
Экспериментальный анализ электронного поля  
вблизи волноводной структуры, содержащей проточную  
стенку ступени

В. П. Шестаков  
Дисперсионные свойства в пространственной структуре  
квант. оптического волновода, включенного в цепочку  
электронных труб

11

2. СЕРИИ ПОЛУПРОВОДНИКОВЫЕ ПРИБОРЫ  
Руководитель: Е. В. Гальперин

9 июня  
(с 10 до 16 часов)

А. А. Малин  
Новые полупроводниковые приборы для реализации  
грозной аппаратуры

Р. В. Сидякин,  
М. В. Дурович  
Новый полупроводниковый прибор на базе кремния  
для анализа герметизации

Т. М. Агашиян,  
А. К. Патрикеев  
Работа дрейфового транзистора при больших сигналах

Ю. К. Барсуков  
Переходный процесс вперемежку герметизации  
структур вблизи при больших токах

9 июня  
(с 18 до 22 часов)

13

Report submitted for the Cosmical Meeting of the Scientific Technological Society of  
Radio Engineering and Electrical Communications in A. S. Paper (VCHS), Moscow,  
6-12 June, 1959

67025  
30V/137-59-10-22149

24.7400  
24.7700

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 10, p 125 (USSR)

AUTHORS: Smolyanskiy, R.Ye., Lukasevich, M.I., Gurevich, V.M.

TITLE: The Importance of Treating Germanium Surfaces Prior to Obtaining Alloying Indium-Germanium p-n-Transition

PERIODICAL: Tyazh. prom-st' Podmoskov'ya (Mosk. obl. sovnarkhoz), 1958, Nr 8, pp 11-17

ABSTRACT: It was found out by electronographical and metallographical analyses that the layer with a distorted crystalline lattice on the Ge surface after mechanical treatment (cutting, polishing) was 60 - 90 μ. The optimum proportion of components in the etching agent H<sub>2</sub>O<sub>2</sub>: NaOH was found which ensures maximum effect of Ge solution: 9 - 10 cm<sup>3</sup> (25%) NaOH per 1 liter (30%) H<sub>2</sub>O<sub>2</sub>. It was stated that the Ge layer, distorted due to mechanical treatment, was fully eliminated by triple etching with the indicated agent. Oxalate agent is recommended for Ge as most efficient. The author stated that one of the causes of short-circuit p-n-transitions in welding-in In

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67025

SOV/137-59-10-22149

The Importance of Treating Germanium Surfaces Prior to Obtaining Alloying Indium-Germanium p-n-Transition

into Ge was the formation of "blank spots", i.e. areas where fusion of In and Ge did not take place. The author supposes that the formation of such "blank spots" can be explained by insufficient preliminary treatment of Ge surface, prior to welding-in. 4

E.T.

Card 2/2

L 19705-63

BDS

S/0109/63/008/009/1615/1625

ACCESSION NR: AP3006466

*X/B*

AUTHOR: Smolyanskiy, R. Ye.

TITLE: Problem of temperature effect on parameters of p-n-p-n devices

SOURCE: Radiotekhnika i elektronika, v. 8, no. 9, 1963, 1615-1625

TOPIC TAGS: p-n-p-n device, semiconductor, semiconductor device, P101 transistor, P105 transistor

ABSTRACT: Experimental studies are reported of the effect of ambient temperature upon the reverse current of the central (collector) p-n junction and upon the current gain of triodes. Si p-n-p-n experimental devices and p-n-p-n switches made up from two P101 and P105 transistors were tested. Experimental and estimated values of the switching voltages and currents at -20 +100C are compared, and good agreement between them is noted. A drift of the current-voltage characteristic with temperature was observed due to mutually independent changes of collector current, hole-type gain, and electron-type gain. These changes cause variations of the switching current and voltage with temperature; simultaneous preservation of constant current and voltage in the above mentioned temperature range is impossible.

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L 19705-63  
ACCESSION NR: AP3006466

The negative-resistance section of the current-voltage characteristic undergoes irregular changes with temperature. Orig. art. has: 8 figures and 5 formulas.

ASSOCIATION: none

SUBMITTED: 05Jul62

SUB CODE: PH

DATE ACQ: 30Sep63

NO REF SOV: 000

ENCL: 00

OTHER: 009

Card 2/2

ACC NR: AP7008918

SOURCE CODE: UR/0140/66/000/004/0127/0128

AUTHOR: Smolyanskly, S. A. (Saratov); Flaysher, N. M. (Saratov)

ORG: none

TITLE: Method of solving Fredholm integral equations of the second kind

SOURCE: IVUZ. Matematika, no. 4, 1966, 127-128

TOPIC TAGS: quantum mechanics, Schrodinger equation, Fredholm equation

SUB CODE: 20

ABSTRACT: The authors present the mathematical aspects of the method used to investigate quantum mechanics problems such as the one-dimensional equation of the Schrodinger two-body problem. Every Fredholm equation of the second kind can be reduced to an equivalent singular integral equation, some of which can be characteristic equations, which can be easily solved in closed form. Since the Fredholm equation and the singular characteristic equation are equivalent, the Fredholm equation of the second kind is solved.

Specifically, the authors examine the class of kernels for which the Fredholm equations of the second kind can be reduced to equivalent, characteristic, singular integral equations.

The authors thank N. P. Kuptsev, L. Ye. Borukhov, V. S. Gur'yanov, and V. M. Gur'yanov for valuable discussions and A. S. Shekhter for support in the work. Orig. art. has: 7 formulas. JPRS: 38,417

Card 1/1

UDC: 517.948

32213

S/139/61/000/004/002/023

E032/E314

On Sommerfeld's polynomial method

$$\frac{1}{f_m} \frac{d}{d\xi_m} \left( f_m \frac{dX_m}{d\xi_m} \right) + \left( \sum_n^3 \phi_{mn} \epsilon_n - v_m \right) X_m = 0, \quad (1)$$

where  $\mu_1 = E$  and  $\epsilon_{2,3}$  are the separation constants. The general solution of the time-independent Schroedinger equation is then:

$$\Psi = X_1(\xi_1) X_2(\xi_2) X_3(\xi_3) .$$

The present author seeks solutions of Eq. (1) in the form:

$$X_m = E_m(\xi_m) P_m(\xi_m) \quad (2)$$

Here, the function  $P_m(\xi_m)$  satisfies the equation:

$$\frac{d^2 P_m}{d\xi_m^2} + \frac{2A_{1m} + B_{1m} \xi_m^h}{\xi_m(1+B_{2m} \xi_m^h)} \frac{dP_m}{d\xi_m} + \frac{A_{0m} + B_{0m} \xi_m^h}{\xi_m^2(1+B_{2m} \xi_m^h)} P_m = 0.$$

(3) . *K*

Card 2/7



32218

S/159/61/000/004/002/023

EO32/E314

On Sommerfeld's polynomial method

Sommerfeld has shown (Ref. 2 - Atomic structure and spectral lines, v. 2, 1956) that these are the only equations which can be solved with the aid of polynomials. The function  $E_m(\xi_m)$  in Eq. (2)

ensures the convergence of the normalizing integral and the fact that the boundary conditions can be satisfied. It is of the form (Ref. 3 - A. Rubinovich - Proc. Phys. Soc., A, 62, 736, 1949)

$$E_m(\xi_m) = f_m^{-1/2} A_{1m} (1 + B_{2m} \xi_m^2)^{1/2} \left( \frac{B_{1m} - A_{1m}}{B_{2m}} \right) \quad (4)$$

Substituting  $X_m(\xi_m)$  by  $E_m(\xi_m)$  given by Eq. (4) into Eq. (1), one obtains an equation for  $P_m(\xi_m)$ . The polynomial method requires that the result should be identical with Eq. (3). Comparison of the functional coefficients of  $P'_m(\xi_m)$  leads to an identity, while a comparison of the functional coefficients of  $P_m(\xi_m)$  leads to the following differential equation:

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On Sommerfeld's polynomial method <sup>32213</sup> S/159/61/000/004/002/023  
 E052/E314

$$\left( \frac{1}{2f_m} \frac{df_m}{d\xi_m} \right)^2 - \frac{1}{2\xi_m} \frac{d^2f_m}{d\xi_m^2} + \sum_n^3 \phi_{mn} \epsilon_n - v_m(\xi_m) = \frac{b_{2m} \xi_m^2 + b_{1m} \xi_m + b_{0m}}{\xi_m^2 (1 + B_{2m} \xi_m^2)} \quad (5)$$

where the coefficients  $b_{im}$  can be uniquely expressed in terms of  $A_{im}$ ,  $B_{im}$  and  $h$ . The latter equation may be looked upon as a criterion of the applicability of the polynomial method to Eq. (1). Fortunately, the general form of  $f_m$  is known. It is, in fact (Ref. 1):

$$f_m(\xi_m) = \frac{1}{\xi_m} \sqrt{[(\xi_m^2 - a^2)(\xi_m^2 - b^2)]} \quad (6)$$

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S/139/61/000/004/002/023

EC52/E514

On Sommerfeld's polynomial method

where  $t = 1$  for the paraboloidal system of coordinates and  $t = 0$  for the others. Eq. (5) can then be used to determine the general expression for the only remaining functional characteristic of Eq. (1), namely,  $v_m(\xi_m)$ , consistent with the requirements of the polynomial method. Substitution of Eq. (6) into Eq. (5) gives for  $t = 0.1$  the following expression for the potential (subscripts omitted for convenience):

$$v(\xi) = \frac{\sum_{k=0}^2 \sum_{n=0}^4 a_{2n+kh} \xi^{2n+kh}}{\xi^2 (1+B_2 \xi^h)^2 [( \xi^2 - a^2 ) ( \xi^2 - b^2 )]^2} \quad (7)$$

For the remaining degenerate forms of the general ellipsoidal set of coordinates there are the following expressions for the potential:

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2213

S/139/61/000/004/002/023

On Sommerfeld's polynomial method E032/E314

$$v(\xi) = \frac{h_2 \xi^{2h} + b_1 \xi^h + b_0}{\xi^2 (1 + B_2 \xi^h)^2} \quad (8)$$

$$v(\xi) = \frac{\sum_{k=0}^2 \sum_{n=0}^4 a_{kh+2n} \xi^{kh+2n}}{\xi^2 (1 + B_2 \xi^h)^2 (\xi^2 - a^2)^2} \quad (9)$$

$$v(\xi) = \frac{\sum_{k=0}^2 \sum_{n=0}^4 a_{2n+kh} \xi^{kh+2n}}{\xi^2 (1 + B_2 \xi^h)^2 [(a^2 - \xi^2)(\xi^2 + b^2)]^2} \quad (10)$$

The coefficient  $a_{2n+kh}$  and  $B_2$  are indeterminate and  $h$  must be a negative integer. A table is appended showing how these formulae can be used in practice.

Acknowledgments are expressed to A.S. Shekhter for interest in this work.

Card 6/7

On Sommerfeld's polynomial method <sup>10213</sup> S/159/61/000/004/002/025  
E052/E314

There are 1 table and 4 references: 2 Soviet-bloc and  
2 Russian translations from non-Soviet-bloc publications.  
The Russian translation of the English-language publication  
not mentioned in the text is: Ref. 4 - A. Rubinovich -  
Proc. Phys. Soc., A, 65, 766, 1950.

ASSOCIATION Saratovskiy gosuniversitet imeni N.G. Chernyshevskogo  
(Saratov State University imeni  
N.G. Chernyshevskiy)

SUBMITTED April 25, 1960

Card 7/7

X

KIRZHNITS, D.A.; SMOLYANSKIY, S.A.

Relativistic model of the field theory which admits an exact  
solution. Zhur.eksp.i teor.fiz. 41 no.1:205-208 J1 '61. (MIRA 14:7)

1. Institut im. P.N.Lebedeva AN SSSR.  
(Quantum field theory)

SMOLYANSKIY, G.A.

Energy flux in a disordered solid. Izv. vys. ucheb. zav.; fiz. 8 no.2:  
172-173 '65. (MIRA 18s7)

1. Saratovskiy gosudarstvennyy universitet imeni Chernyshevskogo.

L 22449-66 EWT(1)/EWT(m /EPF(n)-2/T/EWP(t)/EWA(1) IJP(c) JD/WW/GG  
ACC NR: AP6009145 SOURCE CODE: UR/0139/65/000/005/0067/0072

AUTHOR: Smolyanskiy, S. A.

6.2  
57  
B

ORG: Saratov State University im. N. G. Chernyshevskiy  
(Saratovskiy gosuniversitet)

TITLE: On the theory of the thermal conductivity of a disordered solid

21,44,55

SOURCE: IVUZ. Fizika, no. 5, 1965, 67-72

TOPIC TAGS: thermal conduction, dielectric property, correlation function, Green function, Fourier analysis

21,44,55

ABSTRACT: In view of the lack of a theory capable of calculating the thermal conductivity of arbitrarily disordered dielectrics, especially amorphous bodies, from a unified point of view, the author attempts to construct a microscopic theory for a solid dielectric consisting of identical molecules of mass M. It is shown that it becomes possible to represent in the harmonic approximation the structural properties of the body by a binary correlation function. Allowance for

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2



L 22449-66

ACC NR: AP6009145

5  
anharmonicity leads to the appearance of correlation functions of higher order. The result is based on an expression previously derived by the author (Izv. vuzov SSSR, Fizika, no. 2, 172, 1965) for the energy flux in an arbitrarily disordered dielectric. The correlation functions involved in the expression are determined with the aid of a Green's function technique and a Fourier analysis. The final result is an expression for the thermal conductivity tensor of an arbitrary disordered dielectric. It is pointed out in the conclusion that a theoretical analysis of the resultant equation is still difficult at present, owing to the difficulty of determining some of the quantities that depend on the degree of disorder of the solid. The author is deeply grateful to Yu. V. Konobeyev, V. L. Bonch-Bruyevich, A. S. Shekhter, A. D. Stepukhovich, and V. S. Gur'yanov for valuable remarks and advice. Orig. art. has: 24 formulas.

SUB CODE: 20/ SUBM DATE: 09Jan64/ ORIG REF: 010/ OTH REF: 008

Card

2/2 *HW*

SMOLYANSKIY, Vladimir Grigor'yevich; RYVKIN, S., red.; ULANOVA, L.,  
tekh.red.

[Siemens again] Snova Siemens. Moskva, Izd-vo sotsial'no-ekon.  
lit-ry, 1959. 86 p. (MIRA 12:11)  
(Germany, West--Electric industries)

SMOLYANSKIY, Vladimir Grigor'yevich

[Bourgeois myths and socialist reality] Burzhmaznye mify i  
sotsialisticheskaya deistvitel'nost'. Moskva, Gosplanizdat,  
1959. 86 p. (MIRA 13:8)  
(Russia--Economic conditions)

SMOLYANSKIY, Vladimir Grigor'evich; MATSUK, R.V., red.; YEZHOVA,  
L.L., tekhn. red.

[Criticism of bourgeois "theories" of the Soviet planned  
economy]Kritika burzhuznykh "teorii" o sovetskom planovom  
khoziaistve. Moskva, Gos.izd-vo "Vysshaia shkola," 1962. 94 p.  
(MIRA 15:11)

(Russia—Economic policy)

SMOLYANSKIY, V. G.

"The Soviet economic system and Karl Marx" [in German] by Günter  
Wagenlehner. Reviewed by V. Smolianskii. Vop. ekon. no. 7:134-138  
Jl '62. (MIRA 15:7)  
(Russia--Economic conditions) (Wagenlehner, Günter)

KALASHNIKOVA, V.M.; SMOLYANSKIY, V.L.

Polymer concrete. Priroda 51 no.4:115-116 Ap '62. (MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov Akademii stroitel'stva i arkhitektury SSSR, Moskva.  
(Concrete)

SMOLYANSKIY, V.P. (Penza)

Simplified operation of a mechanism for centering the Rentok  
tomofluorograph. Vest.rent. i rad 31 no.2:79 Mr-Ap '56. (MLRA 9:8)

(FLUOROSCOPY, apparatus and instruments,  
centering appar. in tomofluorography, operation (Rus))

SMOLYANSKIY, Solomon Vladimirovich

[Hello, Siberia] Zdravstvui, Sibir'. Moskva, Sovetskaiia Rossia,  
1960. 76 p. (MIRA 14:12)  
(Siberia--Description and travel)



1. OMOY'NSKIY, Ya
2. USSR (600)
4. Russia - Economic Policy
7. Material resources and national economy. Za ekon. mat. no. 4. 1952.

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

KOLDOMASOV, Yu.I.; DLUGACH, B.A., red.; SMOLYANSKIY, Ya.B., red;  
KHITROV, P.A., tekhn. red.

[Fundamentals of the planning of railroad freight transportation] Osnovy planirovaniia perevozok na zheleznodorozhnom transporte. Moskva, Transzheldorizdat, 1949. 298 p.  
(MIRA 15:4)

(Railroads--Freight)

SMOLYANSKIY, Ya.B., kandidat ekonomicheskikh nauk.

Potentialities in economizing on material and equipment. Zhel.  
dor. transp. 38 no.9:39-45 S '56. (MLRA 9:10)

(Railroads--Equipment and supplies)

GRITSEVSKIY, M.Ye., inzhener; SMOLYANSKIY, Ya.B., kandidat ekonomicheskikh nauk; KUKUSHKIN, M.S., kandidat ekonomicheskikh nauk (Leningrad).

A valuable book on transportation economics ("Economics of transportation." A.E.Gibshman and others. Reviewed by M.E.Gritsevskii, I.A.B.Smolianskii, M.S.Kukushkin). Zhel.dor.transp.38 no.12:86-91 (MLRA 10:2)  
D '56.

(Transportation) (Gibshman, A.E.)

KUDRYAVTSEV, Afanasiy Stepanovich; SMOLYANSKIY, Ya. B., redaktor;  
KOGAN, F.L., tekhnicheskii redaktor

[Economics of socialist transportation] Ekonomika  
sotsialisticheskogo transporta. Moskva, Nauchno-tekhn. izd-vo  
avtotransp. lit-ry, 1957. 390 p. (MIRA 10:5)  
(Transportation, Automotive)

SMOLYANTSKIY, Ye. A.

S/198/63/009/001/005/006  
D251/D308

AUTHORS: Kozhevnykov, S.M., Prazdnikov, A.V. and Smolyanyts'kyi, E.A. (Dnipropetrovs'k)

TITLE: A new edging mechanism for an automatic blooming mill

PERIODICAL: Prykladna mekhanika, v. 9, no. 1, 1963, 86-93

TEXT: The results of a recent All-Union conference on the automation of blooming mills showed that many institutes are greatly concerned with the designing of automatic blooming mills. The hook-edgers used in manual control are not suitable for automation, and a new edger must be designed. It is shown that the working part of the synthesis mechanism should be at an angle and that during the entire operation the movement of the ingot is controlled by the executive unit. Such an edger will fulfil the requirement of minimum displacement of the manipulator rulers for edging ingots of various heights, if it has two leading units. The reduction of edging time is discussed, with reference to the 'Sack' and 'Shloemann' blooming mills, in which two hook edgers on the left and right rulers before

Card 1/2

S/198/63/009/001/005/006  
D251/D308

A new edging mechanism ...

the mill are used, and the kinematics of an ideal blooming regime are discussed. The designing of actual edging mechanisms will depend on the number of regimes required for the mill. There are 6 figures.

ASSOCIATION: Dnipropetrovs'kyy instytut chornoyi metalurhiyi  
(Dnipropetrovs'k Institute of Ferrous Metallurgy)

SUBMITTED: April 16, 1962

Card 2/2

TATAROV, I.; SMOLYANTSEV, B. , inzh.

Progress made by interfarm building organizations in Kirovograd Province. Sel'stroy. lz no.6:12-13 Je '59. (MIRA 12:9)

1. Starshiy inzhener Kirovogradskogo oblastnogo upravleniya po stroitel'stvu v kolkhozakh (for Tatarov).  
(Kirovograd Province--Building)



AKSEL'ROD, V.A., inzhener; SMOLYAR, A.A., inzhener.

Self-unloading trailer D-258 of 12-15m<sup>3</sup> capacity. Mekh.stroi 10 no.5:14-  
19 My '53. (MLRA 6:6)  
(Automobiles--Trailers)

1. SMOLYAR, A. A., Eng.
2. USSR (600)
4. Hydroelectric Power Stations
7. Stakhanovite excavation workers at the Stalingrad Hydroelectric Construction Project, *Biul. stroi. tekhn.*, 10, no. 7, 1953.

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

SMOLYAR, A.A., inzhener.

Bucket for pouring concrete into blocks by hydrotechnical structures. Mekh.  
stroi. 10 no.8:27-29 Ag '53. (MLR 6:8)

(Concrete construction)

*SMOLYAR, A. A.*

USSR/Engineering - Construction

Card 1/1 : Pub. 70 - 3/11

Authors : Grigoryan, Yu. M.; Margus, M. E.; and Smolyar, A. A., Engineers

Title : Automatization of water-drainage during hydrotechnical construction work

Periodical : Mekh. stroi. 4, 9-12, Apr 1954

Abstract : A special pumping system, planned for the drainage of water during the construction of the Stalingrad Hydroelectric Plant on the Volga River, is described. Electrical wiring diagrams, for the two- and three-line automatic pumping-installation, are included. Drawings.

Institution : .....

Submitted : .....

SMOLYAR A.A.

MEDVEDEV, S.R., inzhener, laureat Stalinskoy premii; SMOLYAR, A.A., inzhener.

Experience in large-scale sinking of steel sheet piles. Mekh.stroi. 11  
no.6:9-12 Je '54. (MLHA 7:6)  
(Pile driving)

*SMOLYAR, A.A.*

SMOLYAR, A.A., inzhener; MARGUS, M.Ye., inzhener; GRIGORYAN, Yu.M.,  
inzhener.

Automatization of drainage in hydrotechnical construction work.  
Gidr.stroi. 23 no.5:9-11 '54. (MLRA 7:8)  
(Dams) (Drainage)

SMOLYAR, A.A., inzhener.

Work of the D-264 scraper. Nov. tekhn. i pered. op. v stroi. 18 no. 12:24-  
26 D '56. (MLRA 10:1)

(Scrapers)

98-7-2/20

AUTHOR: Smolyar, A.A., Engineer

TITLE: Mechanized Unloading and Transporting of Cement at the Construction Site of the Stalingrad Hydroelectric Power Plant (Mekhanizatsiya razgruzki i transportirovaniya tsementa na stroitel'stve Stalingradskoy ges)

PERIODICAL: Gidrotekhnicheskoye Stroitel'stvo, 1957, # 7, p 6-12 (USSR)

ABSTRACT: For the construction of the Stalingrad Hydroelectric Power Plant 2.5 million tons of cement are required. In 1956, 91 % of the cement used was transported by rail, the rest by waterways. The pneumatic unloading machines "C-362A", "C-347", "BPI-1" as well as self-unloading cement cars and hoppers were used for unloading. At the same time 267,400 tons, or 70 % of the cement were unloaded by mechanical means, requiring 1 machine operator and 2 unskilled laborers for each machine. In general, handling of cement with self-unloading railroad cars has proved efficient. For unloading cement from barges, unloading machines of the "C-347" type and pneumatic pumps with a diameter of 200 mm are appropriate (shown by Figures 3 and 4 and by Table 4). Durability and operational efficiency of pneumatic pumps must be increased. For moving cement over long distances, double-chamber pneu-

Card 1/2



SMOLYAR, A.A. inzh.

Over-all mechanization of loading and unloading cement. Rech.transp.  
17 no.9:17-19 S '58. (MIRA 11:11)

1. Stalingradgidrostroy. (Loading and unloading)  
(Cement--Transportation)

SMOLYAR, A., inzh.; PASAL'SKIY, I., inzh.

The VR-17 vibration ripper. Stroitel' no.1:18 Ja '59.(MIRA 12:3)  
(Building materials) (Vibrators)

SMOLYAR, A.A., inzh.

Efficient containers for transporting and feeding concrete  
mixes. Energ.stroi. no.4:67-73 '59. (MIRA 13:8)

1. Stalingradg<sup>o</sup>drostroy.  
(Concrete--Transportation)

4

SOV/95-53-6-3/20

AUTHOR: Smolyar, A.A., Engineer

TITLE: Concrete Laying and Compacting by Vibration

PERIODICAL: Gidrotekhnicheskoye stroitel'stvo, 1959, Nr 6, pp 13-15 (USSR)

ABSTRACT: Different types of vibrators ( I-50, I-21A, I-116, I-22, I-86, I-7, S-413) are described in this article. Up to now, more than 4.5 million cu m of monolithic and about 350,000 cu m of prefabricated reinforced concrete have been laid for the construction of the Stalingrad GES. About 6,388 vibrators were used for the compacting of the concrete. High-frequency I-50 vibrators and I-116 vibrators with a planetary mechanism used for compacting in depth, as well as I-7, S-413 and I-21a for superficial compacting have been used mainly. Their operation is not completely mechanized. New models, V-60 and V-82, designed by VNI Stroydormash, are presently being tried separately or in groups of 2-8 vibrators. More power-

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SOV/98-59-6-3/20

Concrete Laying and Compacting by Vibration

ful transformers and dynamotors are urgently needed. Moreover, most vibrators produced so far have many design- and operational deficiencies. The author recommends to step up the production of type S-482, S-483 and S-484, with a vibratory force of 200 to 2,000 kg. Vibro-tables VS-1-54 are presently used for compacting the concrete mixture for the preparation of slabs, sheets and tiles. There are 2 tables and 2 photographs.

Card 2/2

SMOLYAR, A. A.; SOMOV, V. I.

The PVK-25 vibratory road roller. Biul.tekh.-ekon.inform. no.8:42-  
44 '60. (MIRA 13:9)

(Road rollers)

SMOLYAR, A.A., inzh.

RAU-3 pneumatic and mechanical cement unloader. Mekh.stroi.  
18 no.9:25-28 S '61. (MIRA 14:10)

1. Stalingradgidrostroy.  
(Cement) (Compressed air) (Loading and unloading)

RUTBERG, G.B., inzh.; SMOLYAR, A.A.

New machinery and equipment for construction of the Stalingrad  
Hydroelectric Power Station. Gidr.stroi. 31 no.8:24-28 Ag '61.  
(MIRA 14:8)

(Stalingrad Hydroelectric Power Station)  
(Building machinery)



SMOLYAR, A.A., inzh.; SOMOV, V.I., inzh.

PVK attached rollers developed by Volgogradgidrostroi.  
Stroi. i dor. mash. 7 no.8:7-10 Ag '62. (MIRA 15:9)  
(Rollers (Earthwork))

SMOLYAR, A.A., inzh.

Conference on the comprehensive mechanization of the unloading  
and transportation of cement. Mekh. stroi. 21 no.1:26-28 Ja  
'64. (MIRA 17:4)

21724  
S/078/61/006/007/001/014  
B107/3217

X

5.2410

(1087)

AUTHORS:

Khachishvili, V. I., Mozdokeli, T. G., Smolyar, B. Ya.,  
Asatiani, Ya. V.

TITLE:

Production of elementary boron by reducing boron trifluoride  
with metallic sodium

PERIODICAL:

Zhurnal neorganicheskoy khimii, v. 6, no. 7, 1961, 1493-1496

TEXT: A method of producing pure elementary boron was developed by reacting boron trifluoride and metallic sodium at 600°C. A sodium excess is decomposed with alcohol or ammonium chloride solution; sodium fluoride and impurities are extracted by washing with hydrochloric acid and water. The boron thus obtained is a dark-brown amorphous powder, the density of the discharged material is 0.2 - 0.25 g/cm<sup>3</sup>. At room temperature, it absorbs up to 12% by weight. The apparatus used is schematically shown: Metallic sodium is molten in the tank (1) which is heated up to 105°C, then, the tank is filled with dry nitrogen. Boron trifluoride from the cylinder (10) is condensed in the capturing vessels (9) and (11) by cooling with liquid oxygen, the non-condensed gases escape toward the

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B107/B217

Production of elementary ...

vacuum pump (19) which maintains a vacuum of  $10^{-3}$  mm Hg. The process is controlled by a manometer (8). The steel reaction vessel (4) is in the furnace (6) the lateral walls of which are protected by a separate partition (5). The vessel contains the reaction cylinder (3); a high-pressure valve of stainless steel (2) is the connecting piece with the tank (1), the pipes (14) of copper and (15) of stainless steel as well as the siphon with the reducing piece (13) are the connecting pieces with the boron trifluoride cylinders. The air contained in the vessel is sucked off by the copper pipe (16) and the copper (18). After evacuation of the plant, the vessel is heated to  $600^{\circ}\text{C}$  and boron fluoride passed through the spiral copper pipe (12) and the siphon valve of copper (7) at a pressure of 500 mm Hg and a rate of 5 l/min. A valve regulates the addition of liquid sodium. Pressure varies between 400 and 500 mm Hg during the reaction. To terminate the process, first sodium addition is stopped, boron fluoride, however, furthermore introduced until it starts condensing in the cooling vessel (11). The vessel is left cooling, filled with dry nitrogen and then opened. The small amounts of unreacted sodium are separated by washing with anhydrous ethyl alcohol or ammonium chloride solution under nitrogen. Coagulation of the very fine-dispersed

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S/078/61/006/007/001/014  
B107/B217

Production of elementary ...

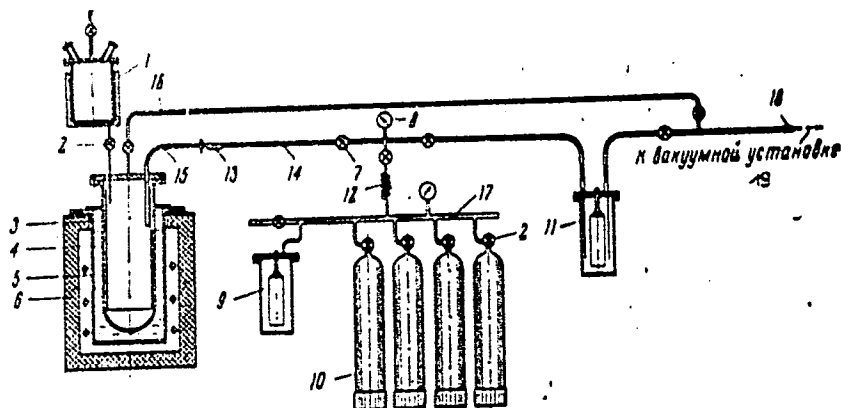
boron (0.5% ammonium chloride solution, 80°C) is important for the further treatment. Subsequently, sodium fluoride is extracted. Experiments at 600 and 850°C showed that at 850°C losses are caused by very fine-dispersed boron and the formation of sodium fluoborate. Moreover, impurities caused by the material of the apparatus are less high at 600°C. The purity of boron prepared at 600°C was the following: coarse-grained part with 99.5% B, 0.2% Si, traces of Mg and Na; fine-grained part with 93% B, 2.0% Si, 0.2% Fe, 0.13% Mg, 0.6% Al, 0.16% Ca, traces of sodium. The authors thank I. G. Gverdtsitel' and Ye. Ye. Baron' for discussion, A. L. Sokolova for his assistance in analyzing. A. V. Topchiyev is mentioned. There are 1 figure, 1 table, and 25 references: 16 Soviet-bloc and 9 non-Soviet-bloc. The four references to English-language publications read as follows: H. C. Cowen. Nucl. Engr., 4, II (1959); B. H. Danziger. Ind. Eng. Chem., 47, 1495 (1955); C. H. Chilton. Chem. Engineering., 2, 148 (1957); J. S. Spevack. U. S. Patent, v. 2, 685, 501 (1954).

SUBMITTED: June 6, 1960. . .

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Production of elementary ...

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Legend to the Fig.: See Text.

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SMOLYAR, G.I.

Some data on the study of preserved cadaver blood from irradiated  
dogs. Gemat. i perej. krov' 1:119-121 '65.

(MIRA 18:10)

1 Kiyevskiy institut perelivaniya krovi.

SMOLYAR, I.M.

Regulating the distribution of workers' settlements in the oil field regions. Nauch.dokl.vys.shkoly; stroi. no.1:215-222 '59.  
(MIRA 12:10)

1. Rekomendovana kafedroy arkhitekturnogo proyektirovaniya planirovki naselennykh mest Moskovskogo arkhitekturnogo instituta.

(Regional planning)



SMOLYAR, I.M.

Distribution of population in the new oil regions of the  
U.S.S.R. Nauch.dokl.vys.shkoly; geol.-geog.nauki no.2:172-  
177 '59. (MIRA 12:8)

1. Moskovskiy arkhitekturnyy institut.  
(Petroleum industry) (Population)

SMOLYAR, I.M., kand.arkhitektury

Organizing brief recreation outside the city. Gor.khoz.Mosk. 35  
no.627-11 Je '61. (MIRA 14:7)  
(Moscow—Recreation areas)

KAPUSTIN, Ye.I., kand.ekon.nauk; LAVROV, V.V.; RYUMIN, S.M.; KONSTANTINOV, Yu.A.; PRAVDIN, D.T., kand.ekon.nauk; KIRILLOVA, N.I.; RIMASHEVSKAYA, N.M.; AMTROPOV, B.F.; RYABKOV, F.S.; POPOV, G.A.; DEM'YANOVA, V.A.; SMOIYAR, I.M.; ACHARKAN, V.A., kand. jurid.nauk; BRONER, D.L.; SHEPTUN, Ye.V.; KRYAZHEV, V.G.; ALESHINA, F.Yu., kand. ekon. nauk; KUZNETSOVA, N.P.; MARKOVICH, M.B.; BIBIK, L.F.; BUDARINA, V., red.; GRIGOR'YEVA, I., mladshiy red.; CHEPELEVA, O., tekhn. red.

[Public consumption funds and improving the welfare of the people in the U.S.S.R.] Obshchestvennye fondy i rost blagosostoiania naroda v SSSR. Moskva, Sotsekgiz, 1962. 222 p. (MIRA 15:6)  
(Cost and standard of living)

ABRAMOVICH, A.D., kand. tekhn. nauk; AMTCHEV, M.F., kand. tekhn. nauk; KAPLAN, G.A., inzh.-ekonomist; LEVIN, S.M., inzh.-zemleustroitel'; LISTENGURT, F.M., kand. geogr. nauk; SAMOYLOV, Ya.M., kand. tekhn. nauk; SMOLYAR, I.M., kand. arkhitek.; SOLOVYENKO, E.A., kand. arkht.; STELICOV, V.D., kand. arkht.; FOLEYEV, V.G., inzh.; Irininali uchastiye: BUTUZOVA, V.P.; GLABINA, E.K.; GOL'DSHEYN, A.M.; DERYANOVSKIY, V.S.; KAPLAN, G.L.; FEDOTOVA, N.A.; TSEYTLIN, G.I.; BURLAKOV, N.Ya., red.; KOMPANEYETS, Z.N., red. izd-va; GOLOVKINA, A.A., tekhn. red.

[Regional planning of economic administrative regions, industrial regions and centers; planning guide]Raionnaia planirovka ekonomicheskikh administrativnykh raionov, promyshlennykh raionov i uzlov; rukovodstvo po proektirovaniu. Pod red. N.I.A. Burlakova. Moskva, Gosstroizdat, 1962. 266 p. (MIRA 15:10)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut gradostroitel'stva i raionnoi planirovki. 2. Zamestitel' direktora po nauchnoy rabote Nauchno-issledovatel'skogo instituta gradostroitel'stva i rayonnoy planirovki (for Burlakov).
3. Nauchno-issledovatel'skiy institut gradostroitel'stva i rayonnoy planirovki (for Butuzova, Glabina, Gol'dsheyn, Deryanovskiy, Kaplan, Fedotova, Tseytlin). (Regional planning)

SMOLYAR, I.M.

Regional planning in the European people's democracies. Izv.AN  
SSSR.Ser.geog. no.2:118-125 Mr-Apr '63. (MIRA 16:4)

1. Nauchno-issledovatel'skiy institut gradostroitel'stva i  
rayonnoy planirovki Akademii stroitel'stva i arkhitektury SSSR.  
(Europe, Eastern--Economic zoning)  
(Europe, Eastern--Economic policy)

BURLAKOV, N.Ya., inzh.; KAPLAN, G.A., inzhener-ekonomist; LISTENBURT, F.M.,  
kand.geogr. nauk; SMOLYAR, I.M., kand. arkhitektury; SOLDATOV, S.I.,  
kand. arkhitektury; SOLOFNENKO, N.A., kand. arkhitektury;  
KHMEI'NITSKIY, G.S., inzh.

Regional planning is necessary. Prom. stroi. 40 no.8:42-45 Ag  
'63. (MIRA 16:8)

(Regional planning)

LISITENICURT, F.M.; SMOLYAR, I.M.

Studying several prerequisites of the industrial development of small and medium-size cities in the Central Economic Region. Izv. AN SSSR Ser. geog. no.4:79-90 '64 (MIRA 17:8)

1. Tsentral'nyy nauchno-issledovatel'skiy i proyektnyy institut po gradostroitel'stva.

LISTENGURT, F.M.; SMOLYAR, I.M.

Defining the concepts of "small" and "medium-size" towns;  
materials on the study of towns of the Central Economic  
region. Vest. Mosk. un. Ser. 5: Geog. 20 no.5:74-77 3-0 '65.  
(MIRA 18:12)



S/103/60/021/008/007/014  
B012/B063

AUTHORS: Volgin, L. N., Smolyar, L. I. (Moscow)  
TITLE: Correction of Servosystems With the Help of Discrete  
Computers  
PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 8,  
pp. 1158-1164

TEXT: Reference is made to the methods of calculating systems and elements in automation, which are based on the theory of steady processes. Mention is made in this connection of papers by A. Ya. Khinchin (Ref. 1), A. N. Kolmogorov (Ref. 2), and the representation of this theory in A. M. Yaglom's paper (Ref. 3). Statistical methods of calculating various technical installations were further developed in papers by V. V. Solodovnikov (Ref. 5), V. S. Pugachev (Ref. 6), Ya. Z. Tsypkin (Ref. 7), and L. T. Kuzin (Ref. 8). The present paper gives a solution to the "synthesis" of computers for any controlled objects, i.e., both for stable and unstable ones. It deals especially with the "synthesis" of servosystems with discrete computers. The problem is characterized by the fact that only part  
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Correction of Servosystems With the Help of  
Discrete Computers

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B012/B063

of the system, i.e., the discrete computer that serves as a corrective member is "synthesized", whereas the controlled object is given. Contrary to S. S. Cheng's method (Ref. 9), the solution offered here is based on the method of polynomial equations. This method was elaborated in the paper of Ref. 10. The problem to be solved is transformed into a system of two polynomial equations, the solution of which is given in the appendix. Some results of the theory of discrete steady processes, obtained in the above-mentioned papers of Refs. 3, 4, 7 - 9, are given next. It is noted that the method applied here is slightly different from those of these papers. The delay operator  $z$  is used as the main operator. It is related to the differential operator  $p$  and the delay time  $T$  in the following manner:  $z = \exp(-pT)$ . The use of the physically realizable operator  $\exp(-pT)$  instead of  $\exp(pT)$  facilitates the calculation of dynamic systems. The authors studied only such processes whose correlation representations are rational functions of  $z$ . A method is given for the development of a correlation representation according to the sequence of correlation factors. Next, formula (16) is written down for the transmission function of the servosystem with a discrete computer. The sum of

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two processes, i.e., the intelligence signal  $S(z)$  and the noise  $N(z)$ , reaches the input of the servosystem. It is assumed that the two processes be steady and statistically independent, and have zero mean values and given correlation factors. The requirements to be met for the selection of the program of the discrete computer are described: The system must be stable, the program of the discrete computer must be physically realizable, the condition of "rough" must be taken into account for the "synthesis" of the system, and the system must be an optimum. Then, the algorithm for the selection of the program is given. In conclusion, it is noted that the method of calculating such systems is greatly influenced by the condition of maintaining "rough" of the system when introducing computers into it. Theory has shown that the introduction of computers into servosystems makes it always possible to obtain optimum systems that satisfy the condition of "rough". The quality of the system, however, will be lower for unstable controlled objects than for stable ones. Besides, the control program for unstable objects is more complicated. The controlled object should be stabilized by means of additional internal connections. If such

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Correction of Servosystems With the Help of  
Discrete Computers

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connections cannot be introduced, it is possible to use discrete computers.  
There are 10 references: 8 Soviet and 2 US.

SUBMITTED: January 11, 1960

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Card 4/4

SMOLYAR, L.E.

Method for calculating linear automatic control systems  
with digital computing devices. Izv. vuz. radiofiz. 2 V. 5;  
no. 4 no. 25 1-5 3 1962. (MIRA 14:10)

Institute of Applied Physics, Academy of Sciences of the USSR.  
(Moscow)

GREBTSOV, G.I., kand. ekon. nauk, dots.; SMEKHOV, B.M., kand. ekon. nauk, dots.; SMOLYAR, L.L., starshiy prepodavatel'; GRANBERG, A.G.; AGANBEGYAN, A., kand. ekon. nauk, red.; KONIKOV, L.A., red.; GERASIMOVA, Ye.S., tekhn. red.

[Principles of working out an interbranch balance] Osnovy razrabotki mezhotrasievogo balansa; uchebnoe posobie. [By] G.I. Grebtsov i dr. Moskva, Ekonomizdat, 1962. 278 p. (MIRA 16:3)

1. Vychislitel'nyy tsentr Gosudarstvennogo nauchno-ekonomicheskogo soveta Soveta Ministrov SSSR (for Granberg).  
(Russia--Economic policy)  
(Programming (Electronic computers))

BINSHTOK, F. I.; SMOLYAR, L. I.

Using mathematical methods and electronic calculating machines  
in establishing a production program for multiple-article pro-  
duction. Vest. mashinostr. 42 no.10:74-77 0 '62.  
(MIRA 15:10)

(Industrial management)  
(Economics, Mathematical)  
(Electronic calculating machines)

DOMIN MONY, V., M.H.; MOLEY, A., M.H.

"Migonda" radio-phonograph combination. Radio no.1:36-38  
Ja '66. (TIM 19:1)



SMOLYAR, M. A.

Standards for the physical development of children in Southern  
Tajikistan. Edrav. Tadzh. 9 no.2:24-26 Mr-Ap '62.  
(MIRA 15:7)

1. Iz instituta krayevoy meditsiny AN Tadzhijskoy SSR i Respubli-  
kanskogo vrachebno-fizkul'turnogo dispansera, TadzhSSR.

(TAJIKISTAN...CHILDREN...GROWTH)

SMOLYAR, O.I.O.

Applying obstetrical forceps according to N.A.TSov'ianov's method.  
Ped., akush. i gin. 22 no.3:57-58 '60. (MIRA 14:4)

1. Akushersko-ginekologicheskaya klinika L'vovskoy oblastnoy  
bol'nitsy (glavnyy vrach - T.T.Plakhova, nauchnyy rukovoditel'-  
dotsent O.Kh. Babadagli).  
(FORCEPS, OBSTETRIC)

SMOLYAR, P.; CHEMUS, V.; ZAPOROSHCHUK, G. [Zaporoshchuk, H.]

Our workshop practices. Mekh. sil'. hosp. 9 no. 6:31-32 Ja '58.  
(MIRA 11:7)

1. Dzhulins'ka mashinno-traktornaya stantsiya, Vinnits'koi oblasti.  
(Vinnitsa Province--Machins-tractor stations)

SMOLYAR, P.K., CHEMUS, V.S.

Using grain threshers in threshing peas. Mekh. sil' hosp. 9  
no. 8:17 Ag '58. (MIRA 11:8)

1. Golovnyy inzhener Dzhulins'kogo radiotekhnichnogo skladu,  
Vinnits'koi oblasti(for Smolyar). 2. Zaviduyuchiy maysterneyu  
Dzhulins'kogo radiotekhnichnogo skladu, Vinnits'koi oblasti(for Chemus).  
(Peas)  
(Threshing machines)

SMOLYAR, P.K.; CHEMUS, V.S.

For timely and good repair of collective farm machinery. Mekh.  
sil'.hosp. 10 no.1:12-13 Ja '59. (MIRA 12:4)

1. Glavnyy inzhener Dzulinskoy remontno-tekhnicheskoy stantsii,  
Vinnitskoy oblasti (for Smolyar). 2. Zaveduyushchiy masterskoy  
Dzhulinskoy remontno-tekhnicheskoy stantsii, Vinnitskoy oblasti  
(for Chemus).

(Agricultural machinery--Maintenance and repair)

SMOLYAR, P.M.

Use of machinery in fitting of window sashes into the frame. Sbor.  
vnedr.rats.pred. v les. i meb.prom. no.2:20-21 '59. (MIRA 13:8)

1. Zavod "Stroydetal'" Glavleningradstroya.  
(Windows) (Woodworking machinery)

SMOLYAR, P.M.

Use of machinery in fitting door leaves into the frame. Sbor.vnedr.  
rats.pred. v les. i meb.prom. no.2:25-27 '59. (MIRA 13:8)

1. Zavod "Stroydetal'" Glavleningradstroya.  
(Doors) (Woodworking machinery)

SMOLYAR, P.M.; NIKULIN, P.I.; BYSTROV, N.I.

Joiner's bench for finishing assembled door leaves.  
Suggested by Smoliar, P.M.; P.I. Nikulin, N.I. Bystrov. Rats. i  
izobr. v stroi. no. 9:71-73 '59. (MIRA 13:1)

1. Rabotniki zavoda "Stroydetal'" stroitel'nogo trasta No. 16  
Glavleningradstroya, Leningrad, Moyka, d. 67/69.  
(Doors)



SMOLYAR, V. I.

Use of calcium and phosphorus by the organism as related to  
different copper and molybdenum content in the diet. Vop.pit.  
24 no.3:49-53 My-Je '65. (MIRA 18:12)

1. Otdel gigiyeny pitaniya (rukkoeditel' - prof. M.G.Kolo-  
miytseva) Ukraineskogo nauchno-issledovatel'skogo instituta  
pitaniya, Kiyev, Submitted October 9, 1964.

1st and 2nd cases

PROCESSES AND PROPERTIES

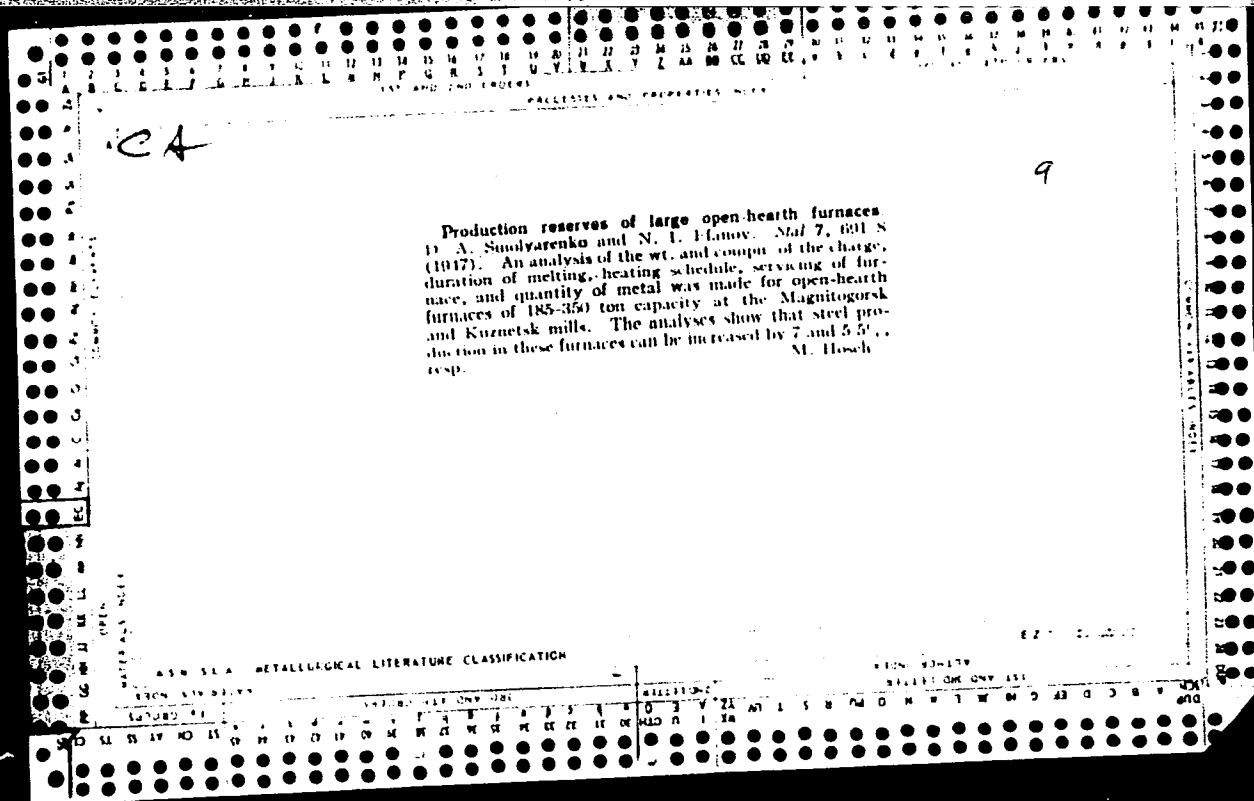
ca

Construction and the first few months of operation of the new open-hearth section at the Makreev plant. M. Tatarov and D. Smolyarenko. *Dokl. Akad. Nauk SSSR*, No. 5, 1954.

When completed the new Martin section will consist of 12 stationary open-hearth furnaces, each having a hearth area of 66.5 sq. m. and a production capacity of 300 tons per day or 80,000-85,000 tons per year. The furnaces are of standard type and are calcd. to operate on a mixt. of blast-furnace and coke-oven gas. The metal will be received in ladles of 165 tons' capacity and will be cast into 7-ton ingots. The plan also calls for 2 mixers of 1500 and 600 tons' capacity, 2 gasholders of 100,000 cu. m. capacity for the blast-furnace gas and 2 of 50,000 cu. m. for the coke-oven gas. So far the first 4 furnaces have been started. Results of several months' operation show the whole project to be successful. Structural details of plant and furnaces, also tables of 3 months' operation are given.

S. I. Madovsky

AS 3 5 A METALLURGICAL LITERATURE CLASSIFICATION



SMOLYARENKO, D.A.

PA 41T28

USSR/Engineering  
Metallurgy  
Furnaces, Metallurgical

Jan 1948

"Some Questions with Regard to Improving the Construction of Martin Furnaces," D. A. Smolyarenko, N. I. Yefanov, Engineers, MChM, 9 1/2 pp

"Stal'" No 1

B. I. Kitayev, and V. V. Lempitskiy made some theoretical conclusions to the effect that a two-story cap is much more efficient than the cap construction suggested by Ventur. However, this still requires practical proof. Ventur heads (caps) operate satisfactorily on large Martin furnaces. Rose's portable head is also finding satisfactory industrial use. It is necessary

USSR/Engineering (Contd)

Jan 1948

to improve the efficiency of the operation of the nozzles, however, when the portable head is used. For this, it is necessary to improve the fire resistance of the material. In this line, experiments conducted at the KMK (Kuznets Metallurgical Combine) are of great interest. Tests are being conducted to determine practicability of using highly aluminum nozzles.

41T28

SMOL'NIKOV, Nikolay Ivanovich; SIVKOVA, Valeriya Aleksandrovna; SMOLYARENKO, D.A., redaktor; DENISOVA, I.S., redaktor; KIRSANOVA, N.A., tekhnicheskiiy redaktor.

[Improvement of sanitary conditions for workers pouring metal in open-hearth mills] Otderevlenie uslevii truda pri razlivke metalla v martenevskikh tsakhakh, Moskva, Isd-vo VTsSPS Profisdat, 1955.  
115 p. (Foundries--Sanitation) (MLRA 9:5)

SMOLYARENKO, D. A.

✓ Proceedings of the All-Union Steel-Making Conference.  
D. A. Smolyarenko. (Stal', 1955, (2), 652-653). (In Russian).  
An account is given of a conference held at Zaporozh'ia in  
March-April, 1955, at which modern steel-making practices  
in the U.S.S.R. was discussed and recommendations for future  
work made. —L. x.

metal

of

SMOLYARENKO, D.A.

All-Union conference of workers in the refractory materials industry.  
Stal' 16 no.4:361-362 Ap '55. (MIRA 9:7)

1. Ministerstvo chernoy metallurgii SSSR.  
(Stalino--Refractory materials--Congresses)

5100 707  
KOLOSOV, Mikhail Ivanovich; KUL'BATSKIY, Aleksey Pavlovich; SMOLYARENKO,  
D.A., red.; ZINGER, S.L., red.

[The pouring of steel] Razlivka stali. Moskva, Gos.nauchno-tekhn.  
izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 211 p.  
(MIRA 11:1)

(Steel--Metallurgy)



*Smolyarenko, D.A.*

133-11-3/19

AUTHOR: Smolyarenko, D.A., Candidate of Technical Sciences

TITLE: The Production of Steel in the USSR (Proizvodstvo stali v SSSR)

PERIODICAL: Stal', 1957, no.11, pp. 968 - 976 (USSR)

ABSTRACT: The development of steel production in the USSR during the last 40 years is outlined. The following subjects are discussed in some detail: 1) dynamics of the development in the production of steel during 1913-1956 and planned output for 1960 (Fig.1) and average data on the output, fuel consumption, proportion of hot metal, etc. are given; 2) the development of modern open-hearth furnaces with some design details for 250 and 500 ton open-hearth furnaces (Table 2, Figs.2-4); 3) the development in the technology of the open-hearth process - double charging, use of oxygen, mechanisation and automation; 4) the development of continuous casting of steel (in 1957, 8 experimental and industrial continuous casting plants were in operation; 5) improvement in the quality of refractories for steel-making furnaces and equipment; 6) exchange and mastering of leading experience between works; 7) the quality of steel produced. The necessity of improving and standardising the quality of a given type of steel produced in various works is stressed; 8) improvement in the organisation of production.

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18(5,6); 25(1) PHASE I BOOK EXPLOITATION 807/3134

Kommunisticheskaya partiya Sovetskogo Soyuza. Vysshaya partiynaya shkola. Dostizheniya nauki i tekhniki i perspektivy razvitiya v promyshlennosti i stroitel'stve. Vyp. 2, shernaya i svetlaya. Methods Applied in Industry and Construction. Iron and Nonferrous Metallurgy. Moscow, Izdatvo IZM. 148 pp. 1st Ed. 1958. 157 p. 22,000 copies printed.

Ed. (Title page): G. I. Pogodin-Alekseyev, Doctor of Technical Science, Professor; Ed. (Inside book): G. V. Popova; Tech. Ed.: K. M. Mamov.

NOTE: This book is intended for the informed reader and should also be of interest to metallurgists.

COVERAGE: This is a collection of lectures, presumably delivered at the Vysshaya partiynaya shkola (Higher Party School) of the Communist Party, USSR, describing recent advances in the field of metallurgy. The approach is basically nontechnical, though a number of processes are briefly described. Specific ore deposits and metallurgical plants are referred to. Some statistics are given. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Popov, A. P., Candidate of Technical Sciences. Technical Progress in Ferrous Metallurgy. Ways of Increasing the Productivity of the Blast-Furnace Process. Technical achievements described in this article include the highest blast-furnace operating efficiency in the world in 1955, when the Soviet yield of pig iron per cubic meter of useful blast-furnace gas stated to have been 11 percent higher than in the United States. The 1956 Soviet yield of open-hearth steel per square meter of hearth is given as 7 metric tons per 24-hr period, as compared with 2.7 for the United States. Current objectives in Soviet ferrous metallurgy include the following: 1) greater application of open-pit mining, increased mechanization of mining operations, prospecting for additional deposits, accelerating concentration operations, construction of several large ore-beneficiation combines in the Krivoy Rog Basin, and new concentration plants in other areas; 2) greater use of fused sinter in pig-iron production, use of air blast with constant relatively high moisture content (30-25 g/kg), increases in blast-furnace capacity and gas pressure, use of oxygen blast and expansion of blast-furnace campaigns to periods up to 12 years; 3) application of new or improved steelmaking methods, such as repetitive cooling of open-hearth furnaces, oxygen ladgasification, and continuous casting; 4) development of new methods of rolling equipment; increases in the variety of rolled shapes produced, mastery of the production of periodic shapes, and increases in the output of sheet metal.

Smolyanenko, D. A., Candidate of Technical Sciences. Latest Achievements in Modern Steelmaking. The author presents a survey of the development of steelmaking methods in Great Britain and the USSR. Progress made in the use of various methods is discussed. Specific topics discussed include production in converters, open-hearth furnaces, and electric furnaces; tapping; application of the oxygen blast in the open-hearth process; vacuum melting and casting; high-temperature refractories; and direct reduction of iron from ore.

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The Coordination Order for Technical Specifications for Products of the Ferrous Metal Industry

and approval of the specifications with obligatory participation of the Sovnarkhozes and Scientific Research Institutes which are the bases of separate industry branches. All specifications will be registered at the Scientific Research Institutes where they will be provided with a number making them valid. The Institutes will examine the specifications for correctness of form, correspondence to standards and already existing specifications. They will have to reduce the quantity of different metal grades, select the best, organize information exchanges between plants, and give recommendations to consumers. Approval of technical specifications has to be the logical final step in development of a work. As one such instance there is mentioned the specification for converter steel blown through with oxygen - the result of research work done by TsNIICm jointly with Zavod imeni Petrovskogo (Plant imeni Petrovskiy). The Dnyepropetrovsk Sovnarkhoz approved for the process a temporary specification designated

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" ChMTU  
TsNIICm 1-57 " (valid until 1959). The last part of

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The Coordination Order for Technical Specifications for Products of the Ferrous Metal Industry

the regulation concerns the numbering system for the specifications (illustrated by examples in the article). The originals of approved specifications will be kept at the corresponding Scientific Research Institutes.

ASSOCIATION: TsNII chërnoy metallurgii (Central Research Institute of Ferrous Metallurgy)

AVAILABLE: Library of Congress

Card 5/3

1. Metal industry-Standards
2. Specifications-Standardization
3. Standardization-USSR

SMOLYARENKO, D.A., kand.tekhn.nauk

Recent achievements in modern steelmaking practices. Dost.nauki  
i tekhn.i pered.op.v prom.i stroi. no.2:24-42 '58.  
(MIRA 12:10)

(Steel--Metallurgy) (Smelting)

SMOLYARENKO, D.A., kand. tekhn. nauk.

Safety measures in repairing metallurgical furnaces. Bezop. truda v prom.  
2 no.11:34 N '58. (MIRA 11:11)  
(Metallurgical furnaces--Maintenance and repair)

AUTHORS: ~~Smolyarenko~~, D. A., Candidate of Technical Sciences, Fertsev, M. A., Engineer SOV/67-58-4-12/29

TITLE: The Perspectives of the Use of Oxygen in Metallurgy in Socialist Countries (Perspektivy primeneniya kisloroda v metallurgii sotsialisticheskikh stran)

PERIODICAL: Kislород, 1958, Nr 4, pp. 40-40 (USSR)

ABSTRACT: In April 1958 the third joint meeting of representatives of the steel-casting industry and the sections for the production of refractories was held at Dnepropetrovsk. The meeting was attended by members of the council for mutual aid (to socialist countries). The meeting was further attended by the specialists from Bulgaria, Hungary, the German Democratic Republic, Poland, Rumania, Czechoslovakia, and the USSR. Reports were delivered which concerned the manner in which conditions set up at the previous meeting (II) at Prague had been fulfilled. Lectures further dealt with the joint plan for the increase of steel production (in socialist countries) during the period of 1958-1960 and the issuing of new regulations for the development of modern methods of production during the period of 1960-1975. It was stated in

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this connection that, while the quality of open-hearth steel produced in the respective countries had remained on the same level, that of converter steel and electric steel had improved considerably. In Czechoslovakia it is planned that oxygen shall be used to a considerably increased extent in steel foundry in the course of the period extending to 1960. For this purpose the establishment of three large new oxygen plants is planned. In Czechoslovakia a new method of preparing steel ingots weighing from 2,5 to 4,5 t, which will be used for casting, has been developed. It was decided at this meeting that measures should be taken for a further increase of steel production (jointly by the socialist countries), not only by the establishment of new plants or by extending and enlarging already existing ones, but also by the increased application of oxygen in all metallurgical processes. Among other measures, also the further development of the production of converter steel by the application of oxygen is planned.

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The Perspectives of the Use of Oxygen in Metallurgy  
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1. Steel industry--USSR
2. Oxygen--Applications

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SOV/28-58-5-2/37

AUTHOR: Smolyarenko, D.A., Candidate of Technical Sciences

TITLE: Problems of Improving the Standardization of Ferrous Metals (Voprosy uluchsheniya dela standartizatsii chernykh metallov)

PERIODICAL: Standartizatsiya, 1958, Nr 5, pp 6 - 11 (USSR)

ABSTRACT: The article demonstrates how the quality of ferrous metals could be raised by adopting an ordered classification, terminology and production standards system, placed on a proper scientific basis. The present classification of the various types of steel is explained, and the contradictions and confusions inherent in the terminology illustrated, mentioning Professor S.S. Shteynberg and Academician A.A. Baykov's contributions to the terminology. To estimate the quality of the metal being turned out by a particular process, the mathematical-statistical method should be widely used. The multiple correlation method is particularly effective since it enables to establish the quantitative dependence of the production

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indices being studied from a number of factors (make-up of the furnace charge, chemical content, mechanical properties etc). Two examples are given of steels which were analysed: the results are converted into statistical form. This shows the extent to which variations in the amount of the individual elements will effect the quality of the finished steel. There are 5 graphs and 2 tables.

ASSOCIATION: TsNIICHERMET

1. Metals--Standards--USSR 2. Steel--Classification

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SOV/28-58-5-9/37

AUTHOR: Smolyarenko, D.A., Candidate of Technical Sciences; Kaplan,  
A.S. and Matyushina, N.V., Engineers

TITLE: The Technical Conditions for New Types of Production in  
Ferrous Metallurgy (Tekhnicheskiye usloviya na novyye vidy  
produktsii v chernoy metallurgii)

PERIODICAL: Standartizatsiya, 1958, Nr 5, pp 37 - 39 (USSR)

ABSTRACT: The article reviews briefly the characteristics of the technical requirements for a number of production groups and new grades of steel and alloys.

ASSOCIATION: TsNIChERMET

1. Steel--Standards

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