

L 59241-65

ACCESSION NR: AT5007937

SUBMITTED: 26May64

ENCL: 00

SUB CODE: NP

NO REF SOVI: 003

OTHER: 002

Card 3/3

IVANOV, N.F.; SIVKOV, Yu.P.; SOLNYSHKOV, A.I.

Measuring the phase volume of the ion beam from the injector  
of a linear accelerator. Prib. i tekhn. eksp. 10 no. 5:30-34  
S-0 '65. (MIRA 19:1)

1. Nauchno-issledovatel'skiy institut elektrofizicheskoy  
apparatury Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy  
energii SSSR, Leningrad.

L 26513-66 EWT(m) IJP(c) GS

ACCESSION NR: AT6012260

SOURCE CODE: UR/0000/65/000/000/0001/0017

AUTHORS: Sivkov, Yu. P.; Solnyshkov, A. I.

39  
B+1

ORG: non

TITLE: Limitations of <sup>19</sup>accelerator current, connected with limiting density of the particles in the phase volume

SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Doklady, 1965. Ogranicheniya toka v uskoritele, svyazannyye s predel'noy plotnost'yu chastits v fazovom ob'yeme, . 1-17

TOPIC TAGS: particle accelerator, focusing accelerator, high energy accelerator, phase velocity, *particle distribution, particle beam*

ABSTRACT: The author discusses methods of increasing accelerator current by increasing the acceptance of the accelerator (the volume in phase space) or by more uniformly filling the acceptance. The general equation of the acceptance surface is written out for linearly independent focusing with in the x and y directions and for an elliptical aperture. Conditions under which the beam introduced into the ac-

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celerator is focused on points inside the acceptance are then derived. In view of the mathematical difficulties involved in interpreting the four-dimensional results, the authors consider also the simpler problem, wherein injection of the beam into the accelerator is considered as the transformation of the phase volume of the beam (emittance) into the acceptance volume with minimum loss. It is concluded that to determine the maximum oscillation amplitudes in a linearly-focusing accelerator with independent focusing with respect to x and y, it is sufficient to measure the projection of the four-dimensional emittance on a given reference plane. To determine more complicated characteristics, such as the fraction of the beam which will have an oscillation amplitude below a certain specified value, or to determine the maximum density in the phase volume, it is necessary to measure the distribution of the beam density in four-dimensional phase space. However, if the emittance is bounded by a certain ellipsoidal surface, measurement of the particle density in two-dimensional projection (cross section) of the emittance is possible. The theoretical conclusions are compared with experimental data obtained at NIIIEFA on the distribution of particles in the beam of a dual plasmatron injector, accelerated to approximately 600 keV (Pribory i tekhnika eksperimenta, in press). The variation of the phase volume of the beam as a function of the discharge current, the magnetic field in the ion source, the focusing voltage, and the particle energy were determined. The focusing voltages has practically no influence on the magnitude of the phase

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ACCESSION NR: AT6012260

volume for a given current. An increase in the discharge current and the magnetic field in the ion source greatly increase the current. The particle density in four-dimensional phase volume turns out to be constant, but further research is necessary to check on this conclusion. With this in mind, estimates are presented for the maximum number of particles that can be injected some of the accelerators now in operation. The estimates show that the limitations connected with the limiting density of the particles in the phase volume are very significant for most modern accelerators. Orig. art. has: 22 formulas, 3 figures, and 2 tables.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 002/ OTH REF: 006/ SUB PPT: 000

Card 3/3 CC

L 28040-66 EWI(m) IJP(c)

ACC NR: AP5027003

SOURCE CODE: UR/0120/65/000/005/0030/0034

AUTHOR: Ivanov, N. F.; Sivkov, Yu. P.; Solnyshkov, A. I.

30  
28  
8

ORG: Scientific Research Institute of Electrophysics Equipment of GKAE Leningrad (Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury GKAE)

TITLE: Measurement of phase space of the ion beam in the injector of a linear accelerator

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1965, 30-34

TOPIC TAGS: linear accelerator, proton beam

ABSTRACT: The phase space was measured for an axisymmetric proton beam having an energy of 500 to 600 kev and a current of the order of hundreds of milliamperes. The distribution of the beam density in the phase space was reproduced on photographic film. Calculations of the beam parameters in the four-dimensional phase space was made in cylindrical coordinates. An equation was derived for the ellipsoidal phase space. The measurements were conducted by using a device similar to that described by L. E. Collins and P. T. Strout in Nucl. Instrum. and Methods, 1964, 26, 157. However, the device used by the authors was provided with a photo-recording camera placed at 30 cm from the 0.06 mm

UDC: 621.384.6.01

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L 28040-66

ACC NR: AP5027003

2

slits of two diaphragms. The device was shown in a photo and its action was explained. A MF-4 microphotometer was used for determining the density distribution recorded by the film. Then, the experimental data were analyzed and the results calculated. An example of the beam density distribution in a transverse phase space was mapped out in a diagram. The results obtained under different conditions and at the currents varying from 350 to 480 ma were summarized in a table. The current characteristics were plotted for four- and two-dimensional phase spaces and for seven various operating conditions. The analysis of curves showed that, in accordance with Liouville's Theorem, the focussing voltage produced no effect upon the phase space. The dependence of the current on the two-dimensional phase space was more expressive. The highest current density obtained at 400 ma was equal to 120 ma/cmmrad. The thanks were expressed to I. M. Kapchinckiy and V. A. Batalin for the discussion of the results obtained in the experiments. Orig. art. has: 5 figures and 9 formulas.

SUB CODE: 18 / SUBM DATE: 11Aug64 / ORIG REF: 002 / OTH REF: 004

Card

2/2

cc

L 07199-67 EWT(1)/EWT(m) IJF(c) AF

ACC NR: AT6031752

SOURCE CODE: UR/3092/66/000/004/0003/0022

AUTHOR: Ivanov, N. F.; Sivkov, Yu. P.; Solnyshkov, A. I.

43  
44  
B+1

ORG: none

TITLE: Characteristics of the ion beam produced by the injector of a linear accelerator

SOURCE: <sup>19</sup> Moscow. Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury. Elektrofizicheskaya apparatura, no. 4, 1966, 3-22

TOPIC TAGS: ion beam, linear accelerator, plasmatron, preinjector

ABSTRACT: The structure of a <sup>2</sup>beam of ions with an energy of 500-700 kev obtained at the output of the proton-synchrocyclotron preinjector was investigated. The beam is designed for injection into a linear accelerator and for this reason the density distribution of ions over the phase space is the most important characteristic of the beam. Essentially, it determines the value of the current which can be captured by the linear accelerator. The transverse phase volume and the magnitude of the current were determined at a distance of approximately 1 meter from the output end of the focusing arrangement used in the linear accelerator. A proton source of the duoplasmatron type and the injector optics make it possible to obtain the crossover of the beam at this point when the maximum current is 500 ma, thereby providing for the op-

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SOLNYSHKOV, V.A., mladshiy nauchnyy sotrudnik

Study of the discharge capacity of broad-crested weirs. Izv.  
VNIIG 65:125-131 '60. (MIRA 14:5)  
(Weirs)

SOLNYSHKOV, V.A., mladshiy nauchnyy sotrudnik

Utilization of hydroelectric power station turbines as spillways.  
Izv. VNIIG 65:133-138 '60. (MIRA 14:5)  
(Spillways)

SOLNYSHKOV, V.A., red.; ARABADZHIAN, I.R., red.; GOL'DIN, A.I.,  
red.; ZHAROV, N.I., red.; IOKHEL'SON, A.Ya., red.;  
KRICHEVSKIY, I.Ye., red.; SKOMOROVSKIY, Ya.G., red.;  
SUDAKOV, V.B., red.; SHEVCHENKO, A.N., red.; RZHONSHITSKIY,  
B.N., red.

[Collection of reports on hydraulic engineering] Sbornik  
dokladov po gidrotekhnike. Moskva, Gosenergoizdat, 1963.  
262 p. (MIRA 17:9)

1. Nauchno-tekhnicheskaya konferentsiya molodykh nauchnykh  
rabotnikov. 5th, Leningrad, 1959.

ARABADZHIAN, I.R., red.; IZMAYLOVA, R.A., red.; KRAYEV, G.A., red.  
[deceased]; KRICHEVSKIY, I.Ye., red.; SOKOLOV, I.B., red.;  
SOLNYSHKOV, V.A., red.; STREL'TSOVA, T.D., red.; FOMIN,  
G.D., red.; SHUL'MAN, S.G., red.; ABRAMSON, L.S., tekhn.red.

[Collection of papers on hydraulic engineering] Sbornik dok-  
ladov po gidrotekhnike. Moskva, Gosenergoizdat, 1962. 284 p.  
(MIRA 17:3)

1. Nauchno-tekhnicheskaya konferentsiya molodykh nauchnykh  
rabotnikov. 4th, 1962.

SOLNYSHKOV, Vol'fram Anatol'yevich; RZHONSNITSKIY, B.N., red.

[Study of the suction pipes of hydraulic turbines] Issle-  
dovaniia otsasyvaiushchikh trub gidroturbin. Moskva, Gos-  
energoizdat, 1962. 106 p. (MIRA 17:4)

24 SOLNYSHKOVA, S. N. 5

Mechanism of the oxidation of microconcentrations of nitric oxide in the corona discharge. T. V. Zabolotskii and S. N. Solnyshkova. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 1388-91 (1950). In mixes. of  $O_2$ ,  $N_2$ , and  $H_2$  contg. NO in concns. of the order of 1 p.p.m., the NO is

oxidized to an extent varying between 50 and 100%, depending on the compn. of the gas. With high  $H_2$  contents (~90%), no  $O_3$  and no  $N_2O_5$  are detected in the gas, and the degree of oxidation is ~50%. With 0.002-0.003%  $O_3$ , there is still no  $N_2O_5$  in the products, and the degree of oxidation attains only 70% with 0.000%  $O_3$ . With the use of 0.007%  $O_3$ , some  $N_2O_5$  appears and the oxidation then reaches 100%; this occurs in gas mixes. contg. not over 65%  $H_2$ , and not below 7%  $O_2$ . With  $H_2$  contents higher than 65%, part of the  $O_3$  formed will be spent in oxidation of  $H_2$ , and the degree of oxidation of NO will remain below 100%, even if the  $O_3$  content of the gas is increased; thus, with 85%  $H_2$  and 11%  $O_2$ , the  $O_3$  oxidation is 0.005%, no  $N_2O_5$  being found, and the degree of oxidation of NO being only 80%. Without the oxidation of  $H_2$  taken into account, the ratio  $O_3/NO$  should be 0.5, which corresponds to the reaction  $2NO + O_3 \rightarrow N_2O_5$ , followed by  $N_2O_5 + NO \rightarrow 2NO_2$ . An excess of  $O_3$  is needed for complete oxidation of NO in  $H_2$ -contg. gas mixes. The accelerating effect of the elec. discharge is demonstrated by a mixt. of  $N_2$  with 1.5%  $O_2$  and ~1 p.p.m. NO; in the elec. field, oxidation is complete, whereas without a field it attains only 8-10%. The final  $O_3$  content is found to be 0.007%. Introduction of preliminarily ozonized  $O_2$  offers no advantage over direct ozonization in the discharge. N. Thou

SOLOBAY, M. A., Cand Med Sci -- (diss) "Microbiological characteristics and certain data on the epidemiology of dysentery produced by Newcastle bacteria in the city of Odessa." Odessa, 1957. 15 pp (Odessa State Med Inst im N. I. Pirogov), 200 copies (KL, 2-58, 117)

KALASHNIKOV, V.I., (st. Chernovtsy); SHAMIS, I.M., glavnyy bukhgalter  
(st. Chernovtsy); SOLOBAYEVO, L.D., ekonomist (st. Chernovtsy)

Advanced technology of car repair and improved cost accounting.  
Zhel. dor. transp. 38 no.8:54-57 Ag '56. (MLRA 9:10)

1. Zamestitel' nachal'nika Chernovitskogo vagonnogo uchastka  
(for Kalashnikov).  
(Railroads--Cars--Maintenance and repair)



S/194/62/000/008/032/100  
D201/D308

AUTHOR: Solobayev, Sh.A.

TITLE: Scientific and technical conference on telemechanization of the national economy of the USSR, Moscow, November 16-21, 1959

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 8, 1962, abstract 8-2-180 m (Sb. nauchno-tekhn. inform. po elektrifik. s. kh. Vses. in-t n.-i. elektrifik. s. kh., 1961, no. 9, 60 - 61)

TEXT: 148 scientific and research institutes, design institutes and design offices were represented at the regular scientific and research conference on the problems of design and production of telemechanic and communication channel instrumentation, held in Moscow. 55 papers on production, design and utilization of telemechanic instrumentation were presented. It was pointed out that the means of telemechanics find more and more applications in power engineering, petroleum and gas industry, pipeline transport, coal industry, agriculture and on railways. The fundamental trends in the  
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Scientific and technical conference ... S/194/62/000/008/032/100  
D201/D308

development of the telemechanic instrumentation are as follows: 1) Creation of a single set of instruments for concentrated and scattered objects; 2) automation of controlled and control points; 3) use of contactless elements. New works on HF-channel telemechanics, signal distortion in electric circuits and methods of investigating the interference in telemechanic channels were discussed. [Abstracter's note: Complete translation.] ✓

Card 2/2

S o L o B e l e v s k i

30(9)  
 ARTIST:  
 TITLE:  
 PERIODICAL:  
 ANNOTATION:

307/30-59-1-47/57  
 Problems Concerning Philosophy of Modern Natural Science (Filosofskie voprosy sovremennoye yestestvoznaniya)  
 Vestnik Akademii nauk SSSR, 1959, Nr 1, pp 132-136 (USSR)

At the end of October last year an All-Union conference took place which dealt with the problems of the philosophy of science. The conference had been convened by the Academy of Sciences of the USSR (Academy of Sciences of the USSR) and was held in Moscow. More than 600 well-known scientists from the spheres of science and philosophy took part, among them Academicians and Corresponding Members, Academy of Sciences, USSR, Representatives of the Academies of the Union Republics and Branch Academies as well as scientists from scientific research institutes and universities. Scientific representatives from Bulgaria, Rumania, Germany, Hungary and Czechoslovakia were guests. It was the aim of the conference to unite the creative powers of Soviet philosophers and scientists for the purpose of a dialectic-materialistic generalization of the achievements of modern science and for raising its level which is intended to contribute towards a solution of the most important scientific problems in as short a period as possible.

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Each year the Academy of Sciences of the USSR, Chairman of the President of the AS USSR, Academician A. N. Kozlov, Chairman of the Committee for the Organization of the Conference on the occasion of their opening speeches. Further, the following reports were heard and discussed: M. B. Mitin, Academician, spoke about Lenin's "materialism and empiriocriticism" as the great ideological weapon for the perception and transformation of the world. M. E. Osel'yanovskiy, Academician of the AS USSR, dealt in his report with V. I. Lenin and the philosophical problems of modern physics.

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D. M. Kishinev, Doctor of Philosophical Sciences, Corresponding Member, Academy of Pedagogical Sciences USSR, reported on the attention in nature of the forms of movement of matter. I. B. Aliev, corresponding member, Academy of Sciences, USSR, spoke about the philosophical meaning and the importance of the theory of relativity and A. A. Livanov, Professor, dealt with cybernetics and natural science. In his report, Academician, spoke about some methodological problems of cybernetics. Academician, and D. M. Zuck, Corresponding Member, AS USSR reported on the role of physics and chemistry in investigating biological problems. A. I. Opatin, Academician spoke about the formation of life in the light of the achievements of modern natural science. I. A. Grushchanskaya report dealt with the Lenin's reflex theory and modern physiology of the sensual organs. A. E. Zhmudskiy opposed the opinion expressed by M. E. Osel'yanovskiy who said that in the capitalist countries a crisis in physics is approaching.

SOLOBEY, I. N.

USSR/ Biology - Botany

Card 1/1 : Pub. 86 - 21/46

Authors : Solobey, I. N.

Title : Water caltrop in bodies of water of forest areas

Periodical : Priroda, 43/9, 97-99, Sep 1954

Abstract : Description is given of water caltrop found in lakes and back waters of rivers in Byelorussia. A comparison is made of the food value of the seeds of this plant with maize corn, potatoes and wheat with figures of the percentages of proteins, fats, starch and sugar. Some directions are given as to methods of increasing the growth of water caltrop. Illustrations.

Institution : .....

Submitted : .....

SOLOBODYANIK, N. I.

Agricultural Machinery

Threshing, rubbing, and extracting vegetable seeds. N. I. Slobodyanik. Sel.1 sem. 19,  
No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED.

5(4)

AUTHORS:

Miller, V. B., Neyman, M. B.,  
Solobovnikov, S. P.

SOV/76-33-2-35/45

TITLE:

A Study of the Reaction of Isotopic Exchange Between  $\text{CH}_2\text{J}_2^*$   
and  $\text{J}_2$  by the Intermittent Illumination Method (Issledovaniye  
reaktsii izotopnogo obmena mezhdu  $\text{CH}_2\text{J}_2^*$  i  $\text{J}_2$  metodom  
preryvistogo osveshcheniya)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 2,  
pp 457 - 462 (USSR)

ABSTRACT:

The method mentioned in the title is based upon an impulse radiation (Ref 4) with a definite ratio between the illuminated and dark periods. This "pulsating" illumination is usually accomplished by means of a rotating disk with slits in it, which interrupts a light beam or allows it to penetrate the slits periodically. In the present work tagged methylene iodide was used which was obtained from  $\text{CH}_2\text{J}_2$  and  $\text{NaJ}^{131}$ . The

Card 1,3

A Study of the Reaction of Isotopic Exchange Between  $\text{SOV/76-33-2-35/45}$   
 $\text{CH}_2\text{J}_2^*$  and  $\text{J}_2$  by the Intermittent Illumination Method

investigations were carried out using an apparatus (Fig 3) the reaction vessel of which was located in an air thermostat, and the reaction components could be separated after the experiment by adsorption of the iodine on silver. The irradiation was carried out using an SVDSH-250-3 Hg lamp and the light impulses could be varied from 1 to  $10^{-4}$  seconds by means of a rotating disk. The exchange between  $\text{CH}_2\text{J}_2^*$  and  $\text{J}_2$  was tested in the dark in illuminations, under an iodine pressure of 0.2 mm and a methylene-iodide pressure of 1 mm and at  $30^\circ\text{C}$ . The experimental results obtained (Table) were represented in form of  $w_0/w_{st}$  as a function of  $\lg \lambda$  ( $w_0$  = reaction rate (RR) at intermittent illumination;  $w_{st}$  = (RR) with constant illumination) (Fig 6). The constant of the (RR) for the reaction  $\text{CH}_2\text{J}_2^* + \text{J}$  amounted to  $3 \cdot 10^{-12}$   $\text{cm}^3/\text{second}$ , and the value of the average life of the radicals was found to be:  $2 \cdot 10^{-2}$  seconds. According to the mechanism  $\text{CH}_2\text{J}_2^* + h\nu \longrightarrow$

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A Study of the Reaction of Isotopic Exchange Between  $\text{CH}_2\text{J}$  and  $\text{J}_2$  by the Intermittent Illumination Method SOV/76-33-2-35/45

$\text{CH}_2\text{J}^* + \text{J}^*$  (9) (and other reactions I - VI) the stationary concentration of the radicals was calculated to be  $2 \cdot 10^{13} \text{ cm}^{-3}$ . There are 6 figures, 1 table, and 4 references, 1 of which is Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut khimicheskoy fiziki, Moskva (Moscow Institute of Chemical Physics of the Academy of Sciences, USSR)

SUBMITTED: July 31, 1957

Card 3/3



Z/056/63/020/002/005/007  
E073/E135

**AUTHOR:** Solochovnik, S.F.

**TITLE:** Automatic machine for hardening long cylindrical components

**PERIODICAL:** Hutnictví a strojírenství. Přehled technické a hospodářské literatury, v.20, no.2, 1963, 93, abstract HS 63-1134. (Mashinostroyeniye, Kiev, no.4, 1962, 36-37)

**TEXT:** The article describes an automatic hardening machine for high-frequency surface hardening of components. A sketch showing the operation of the machine is given, and a diagram of the last stage circuit breakers. The machine hardens 66 components per hour.  
2 figures.

[Abstracter's note: Complete translation.]

Card 1/1

BREDIKHIN, B.P.; SOLOD, B.A., master; CHERTKOV, I.Ye., pomoshchnik  
mastera; SHAMANOV, L.G., prepododavatel'; KVASHIN, V.V.,  
prepodavatel'.

"Design and repair of diesel locomotives" by A.A.Poido, I.G.  
Kokoshinskii. Reviewed by B.P.Bredikhin and others. Elek.i  
tepl.tiaga 3 no.9:p.3 of cover S '59. (MIRA 13:2)

1. Priyemshchik Glavnogo upravleniya lokomotivnogo khozyaystva  
Ministerstva putey soobshcheniya (for Bredikhin). 2. Depo  
Rtishchevo II, Privolzhskaya doroga (for Bredikhin, Solod,  
Chertkov). 3. Shkola mashinistov, stantsiya Penza, Kuybyshev-  
skaya doroga (for Shamanov, Kvashin).

(United States--Diesel locomotives)

(Poido, A.A.) (Kokoshinskii, I.G.)

SOLOD, G. I.

"An Investigation of Certain Factors in the Longevity of Mine Conveyers (For Example, of the Reduction Gears of Scraping Bucket Conveyers)." Cand Tech Sci, Moscow Mining Inst imeni I. V. Stalin, 30 Dec 54. (VM, 22 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)

SO: SUM No. 556, 24 Jun 55

SOLOD, G.I., kand.tekhn.nauk.

Effect of coal dust on the wear of reduction gear parts on mine  
haulage machinery. Nauch.trudy MGI no.15:53-62 '55. (MIRA 10:10)  
(Conveying machinery)  
(Mine dusts) (Mechanical wear)

SOLOD, G.I., kand.tekhn.nauk

Structural changes in surface layers of steels under the effect  
of friction. Nauch.trudy MGI no.17:129-135 '56. (MIRA 10:11)  
(Coal mining machinery) (Mechanical wear) (Metallography)

SOLOD, G.I., kand.tekhn.nauk

Increasing the durability and operational dependability of  
transmission devices on mine haulage machines. Nauch.trudy MGI  
no.17:137-150 '56. (MIRA 10:11)  
(Conveying machinery--Transmission devices)

SOLCD, G.I.

Determining the resistance and power of flexible conveyers with  
supporting bed. Nauch.trudy MGI no. 20:119-124 '58. (MIRA 11:8)  
(Conveying machinery)  
(Mine haulage)

SHORIN, V.G., SOLOD, G.I.

Selecting basic parameters for trains in coal mines. Nauch. trudy  
MOI no. 20:216-230 '58. (MIRA 11:8)  
(Mine railroads--Cars)



GORBACHEV, B.G., BANK, A.S., SOLOD, G.I., SHORIN, V.G.

Inertia brakes for mine cars. Nauch. trudy MOI no. 20:248-258 '58.  
(MIRA 11:8)

(Mine railroads--Cars)  
(Railroads--Brakes)

POLYAKOV, Nikolay Sergeyeovich, prof.; SHTOKMAN, Il'ya Grigor'yevich, prof.; KOMAROVA, Yevgeniya Kuz'minichna, dotsent; SPIVAKOVSKIY, A.O., prof., retsenzent; ANDREYEV, A.V., dotsent, retsenzent; VASIL'YEV, N.V., dotsent, retsenzent; YEVNEVICH, A.V., dotsent, retsenzent; LOPATIN, S.I., dotsent, retsenzent; SOLOD, G.I., dotsent, retsenzent; SHAKHMEYSTER, L.G., dotsent, retsenzent; SHORIN, V.G., dotsent, retsenzent; SAMOYLYUK, N.D., inzh., retsenzent; KOLOMIYTSYEV, A.D., otv.red.; SHKLYAR, S.Ya., tekhn.red.; KONDRAT'YEVA, M.A., tekhn.red.

[Problems and exercises on mine haulage] Sbornik zadach i uprazhnenii po rudnichnomu transportu. Izd.2., dop. i perer. Moskva, Ugletekhizdat, 1959. 256 p. (MIRA 13:4)

1. Chlen-korrespondent AN ŪSSR (for Polyakov). 2. Chlen-korrespondent AN SSSR (for Spivakovskiy). 3. Kafedra rudnichnogo transporta Moskovskogo gornogo instituta (for Spivakovskiy, Andreyev, Vasil'yev, Yevnevich; Lopatin, Solod, Shakhmeyster, Shorin).  
(Mine haulage)

PHASE I BOOK EXPLOITATION

SOV/5431

Spivakovskiy, Aleksandr Onisimovich, Nikolay Deomidovich Samoylyuk, G. I. Solod,  
and Lev Grigor'yevich Shakhmeyster

Podzemnyye konveyernyye ustanovki (Underground Conveyer Installations) Moscow,  
Gosgortekhnizdat, 1960. 478 p. Errata slip inserted. 5,000 copies printed.

Resp. Ed.: A.O. Spivakovskiy; Ed. of Publishing House: A.D. Kolomeytsev;  
Tech. Eds.: V.L. Prozorovskaya and Z.A. Boldyreva.

PURPOSE: This book is intended for engineering and technical personnel of the  
mining industry engaged in designing and operating underground conveyers;  
it may also be useful to students of mining institutes and mining tekhnikums.

COVERAGE: The book describes underground conveyers used in the mining industry  
in the USSR and abroad and the construction of their most important individual  
subassemblies and elements; the fundamentals of theory and calculations of  
underground scraper conveyers, belt conveyers, slat conveyers, and combined  
conveyers (new chain-belt and rope-belt conveyers) are discussed and basic  
reference material regarding USSR underground conveyers is presented.

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Underground Conveyer Installations

SOV/5431

The first part of the book was written by N.D. Samoilyuk, Candidate of Technical Sciences; the second part by L. G. Shakhmeyster, Candidate of Technical Sciences; the third by G. I. Solod, Docent, Candidate of Technical Sciences; and the fourth by A.O. Spivakovskiy, Professor. Section 4 of Ch. VII (Part II) was written by O.G. Karbasoviy, Aspirant. There are 72 references: 53 Soviet, 10 English, 8 German, and 1 French.

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Preface

PART I. SCRAPER CONVEYERS

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Ch. I. General Concepts, Basic Types	
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Card 2/8

SPIVAKOVSKIY, A. O.; SOLOD, G. I. (docent)

"Model test of non-stationary processes on large band conveyor equipment."

report submitted for Intl Conf on Conveyor Engineering & Construction Machinery,  
Magdeburg, E. Germany, 7-12 Sep 64.

СНИЛ, В.В. 1980г.

Characteristics of traction circuits and selecting the reactive power for the drive of multiple-transmission conveyors. Izv. vuzov. Ucheb. zap. gor. shar. 7 no.9:105-112 1974. (MIRA 18:1)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki. Rezenyubana yezhegodnoy nauchno-tekhnicheskoy konferentsiyey spetsialistov.

SOLOD, G.I., kand.tekhn.nauk; FUKHOV, Yu.S., gornyy inzh.

Experimental study of a test model of the KLK-1 belt cable conveyer.  
Ugol' 39 no.11:34-38 N '64. (MIRA 18:2)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki.

AMREJEV A.V., prof.; GRIGOR'YEV, V.N., dotsent; YEVNEVICH, A.V., prof.;  
SOLOD, G.I., dotsent; SPIVAKOVSKIY, A.O., prof.; SHAKHMYSTER,  
I.G., dotsent

"Mine transportation, a book edited by I.G. Shtokman. Ugol'  
40 no.1:82 Ja '65. (MIRA 18:4)

1. Kafedra transportnykh mashin i kompleksov Moskovskogo instituta  
radioelektroniki i gornoy elektromekhaniki.



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SOLOV, V. I.

"Certain Questions of the Effectiveness of the Breakdown of Coal by  
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Cand Tech Sci, Moscow Mining Inst imeni I. V. Stalin, 30 Dec 54. (WM, 22 Dec 54)

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SOLOD, V.I., kand.tekhn.nauk.

Forces needed for pressing rods into coal bodies. Nauch.trudy  
MGI no.15:95-98 '55. (MIRA 10:10)  
(Coal mining machinery--Testing)  
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SOLOD, V.I., kand.tekhn.nauk

Correlation between forces acting on a coal mining machine  
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Nauch.trudy MGI no.17:75-83 '56. (MIRA 10:11)  
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GETOPANOV, V.N., inzh.; KAZAK, Yu.N., inzh.; SOLOD, V.I., kand.tekhn.nauk

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(Coal mining machinery)

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Investigating the process of anthracite breaking by mining  
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(Coal mining machinery)

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Principles of calculating the pull of a ring-type chain working  
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no.41:27-32 '62. (MIRA 16:10)

SOLOD, V.I., kand.tekhn.nauk; KARTAVYY, N.G., kand.tekhn.nauk

Preliminary results of introducing USB-2 coal plows in Donets  
Basin mines. Ugol' 38 no.3:40-44 Mr '63.

(MIRA 18:3)



TOPCHYEV, A.V.; SOLOD, V.I.; GETOFANOV, V.N.; KOVAL', P.V.

[Calculating the efficiency of mining cutter-loaders;  
methods of calculation] Raschet proizvoditel'nosti gor-  
nykh kombainov; metodika rascheta. Moskva, Nedra, 1965.  
66 p. (MIRA 18:5)

HOLODANYUK, I. Kiyev); BULANOV, A. (Kiyev)

System first of all. Voen. znan. 41 no.7:16-18 J1 '65. (MIRA 18:7)

05486

SOV/141-2-2-11/22

AUTHORS: Gvozdover, S.D. and Solodar', G.G.

TITLE: Characteristic Equation of the Travelling-wave Tubes for Medium Currents

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 2, pp 229 - 243 (USSR)

ABSTRACT: A problem similar to that presented in this article has been dealt with earlier by S. Olving (Ref 2). A more general approach to the problem is attempted here, it being assumed that the geometrical parameters of the tubes are arbitrary. The notation adopted is similar to that of earlier work (Ref 1). Also, a new function, defined by Eq (1), is introduced; this is plotted in Figure 1. The basic linearised equations of the system, derived under the assumption that the alternating components are appreciably smaller than the direct ones, are similar to those of Ref 1:

$$M(aT, a\tau) = N(a\tau, b\tau) \quad (2),$$

Card1/4 where M, N and T are defined by Eqs (3), (4) and (5).

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SOV/141-2-2-11/22

Characteristic Equation of the Travelling-wave Tubes for Medium Currents

The right-hand side term of Eq (2) can be represented in the form of Eqs (11). These can be expanded into the Taylor series so that N can be approximately represented by Eq (15). M of Eq (2) can be represented by Eqs (17). This can also be expanded into the Taylor series as is shown in Eq (19). The final expression for M is given by Eq (24). By substituting Eqs (15) and (24) into Eq (2), an approximate algebraic equation, with X as the unknown, is obtained. The resulting expression is in the form of Eq (24) or, finally:

$$X(1 + QBX)(X + L)^2 = - (1 - QX)^2 \tag{26a}$$

where B is defined by Eq (26B). If the tube is such that it fulfils the conditions defined by Eqs (28), the characteristic equation is simplified and can be written as Eq (29a). The function M can also be expanded by means of the asymptotic formulae provided the conditions of Eq (30) are fulfilled; in this case, the characteristic

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SOV/141-2-2-11/22

Characteristic Equation of the Travelling-wave Tubes for Medium Currents

equation is given by Eq (29~~6~~) which coincides with Eq (29a). Similarly, it is possible to expand the function  $N$  by means of the asymptotic formulae and the characteristic equation is then in the form of Eq (30B). First, Eq (29a) is investigated for  $L = 0$ , which represents the condition of complete synchronism. The equation is now written as Eq (36a), which is a standard cubic equation; the complex roots of the equation are plotted in Figure 2 (solid curves). In the case of narrow beams, the conditions of Eq (28a) are not fulfilled and it is necessary to solve the complete fourth-degree characteristic equation (see Eq 26a). The equation was solved for  $L \neq 0$  for various values of  $B$ . Graphs illustrating the dependence of the roots of Eq (26a) on  $Q$  for  $B = 0.25$  and  $B = -0.0635$  are shown in Figure 7. It is seen that the equation always has a pair of complex conjugate roots having a positive real component. At small  $Q$  and  $B > 0$ , the equation has a pair of negative real roots which, for  $Q = Q^*$ , coincide and become a pair of

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SOV/141-2-2-11/22

Characteristic Equation of the Travelling-wave Tubes for Medium Currents

complex conjugate roots. The paper contains an appendix which gives expressions for the roots of Eq (36a) (see Eqs 1-6A) and an asymptotic expression for the gain factor of the tube (see the Eq 6"A). From the analysis, it is concluded that the complete fourth-degree equation has complex roots (in the region which is of most practical interest) which do not differ appreciably from those of Eq (29a). The coefficient of depression derived on the basis of Eq (26a) is twice lower than that of the "small-current theory".

There are 7 figures and 7 references, of which 6 are Soviet and 1 English.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: July 18, 1958

Card 4/4

ACC NR: AP7007721

SOURCE CODE: UR/0188/57/000/001/0043/0048

AUTHOR: Mamedli, R. M.; Solodar', G. G.; Yatsenko, L. A.

ORG: none

TITLE: Experimental study of a frequency multiplier based on a two-stage traveling-wave tube

SOURCE: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 1, 1967, 43-48

TOPIC TAGS: traveling wave tube, frequency multiplication

ABSTRACT: Results of an experimental study of a traveling-wave tube frequency multiplier with input and output frequencies between 3000 and 9000 MHz are given. The multiplier (see Fig. 1) consists of an electron gun, two helical-type delay structures separated by a drift space, and a collector. Both helices are impedance-matched to the inputs and the outputs with waveguides such

Card 1/2

UDC: 621.374.4

PROCESSES AND PROPERTIES IN...

Solutions of vat dyes. N. N. Orlov, L. S. Solodar and M. A. Rosenman. *Ukrain. Khim. Zhur.* 9, 231-61 (1934).

Indigo blue (I) and indigo 4B (II) are not reduced by HCO<sub>2</sub>H (III) in aq. soln.; II, but not I, is reduced by SO<sub>2</sub>, while both I and II are reduced by III in presence of SO<sub>2</sub>, according to the reactions 2H<sub>2</sub>SO<sub>3</sub> + III → H<sub>2</sub>S<sub>2</sub>O<sub>4</sub> + CO<sub>2</sub> + 2H<sub>2</sub>O; NH<sub>2</sub>C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>C<sub>6</sub>H<sub>4</sub> (IV) + H<sub>2</sub>SO<sub>3</sub> + 2H<sub>2</sub>O → (NH<sub>2</sub>C<sub>6</sub>H<sub>4</sub>COOH)<sub>2</sub>C<sub>6</sub>H<sub>4</sub> (V) + 2H<sub>2</sub>SO<sub>3</sub>. II can be reduced also by satg. C<sub>6</sub>H<sub>5</sub>N with SO<sub>2</sub>, and adding H and Zn, according to the reactions C<sub>6</sub>H<sub>5</sub>N + SO<sub>2</sub> → C<sub>6</sub>H<sub>5</sub>N SO<sub>2</sub>O (VI); VI + Zn → C<sub>6</sub>H<sub>5</sub>N S O (VII)

$$+ ZnO; VII + IV \rightarrow C_6H_4 \begin{matrix} \diagup C-O-SO_2-O-C \diagdown \\ | \quad \quad \quad | \\ NH \quad \quad \quad NH \end{matrix} C_6H_4$$

VIII + C<sub>6</sub>H<sub>5</sub>N; VIII + 2H<sub>2</sub>O → V + H<sub>2</sub>SO<sub>3</sub>; III can replace Zn in the above reactions. Directions are given for prepng. indigosols from the leuco bases by adding C<sub>6</sub>H<sub>5</sub>N and VI, gradually raising the temp. to 65° (during 4 days), adding H<sub>2</sub>O to ppt. the C<sub>6</sub>H<sub>5</sub>N sulfites, and warming the latter with 3 N NaOH. B. C. A.

ASA S.E.A. METALLURGICAL LITERATURE CLASSIFICATION



ca

10

Dealkylation of aromatic hydrocarbons. The problem in connection with the reversibility of the Friedel-Crafts reaction. N. N. Dolov and L. S. Sokolov. *J. Applied Chem. (U.S.S.R.)* 8, 117 (in German 12: 71 (1945)). In the dealkylation carried out according to Fischer and Nuggemann (*C. I.* 11, 947) the yield of low-boiling products increases with increase in the concn. of  $AlCl_3$  and the temp., having a max. at 4%  $AlCl_3$ . The demethylation of  $C_6H_5Me$  effected by passing  $HCl$  through the reaction mixt. is of no practical value because of low yields, this justifying the assumption that the Friedel-Crafts reaction (*Compt. rend.* 100, 106 (1885)) is not quite in agreement with the mechanism proposed by Dougherty (*C. I.* 23, 1120). A continuous process permits of raising the  $PhMe$  yield to 25-30%. Twelve references. A. A. B.

ASAC 114 METALLOGICAL LITERATURE CLASSIFICATION

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

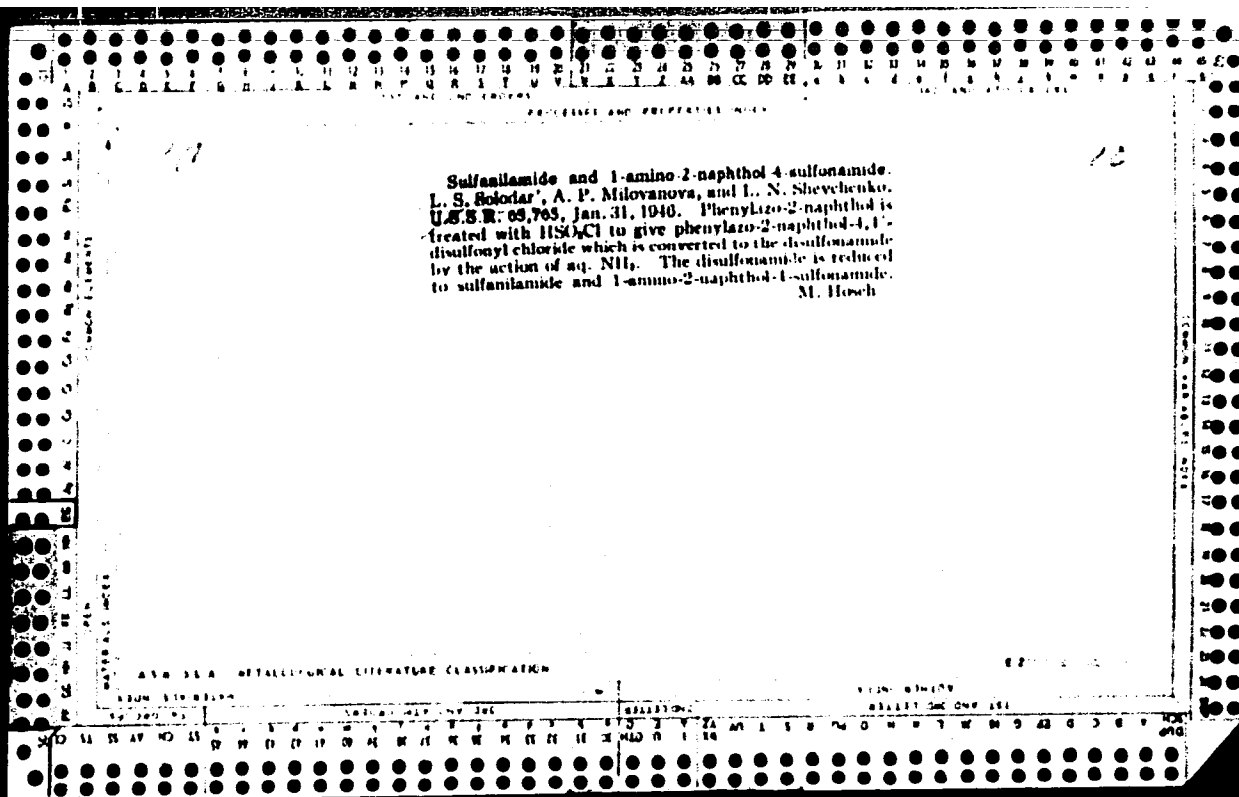
PROCESSES AND PROCEDURES

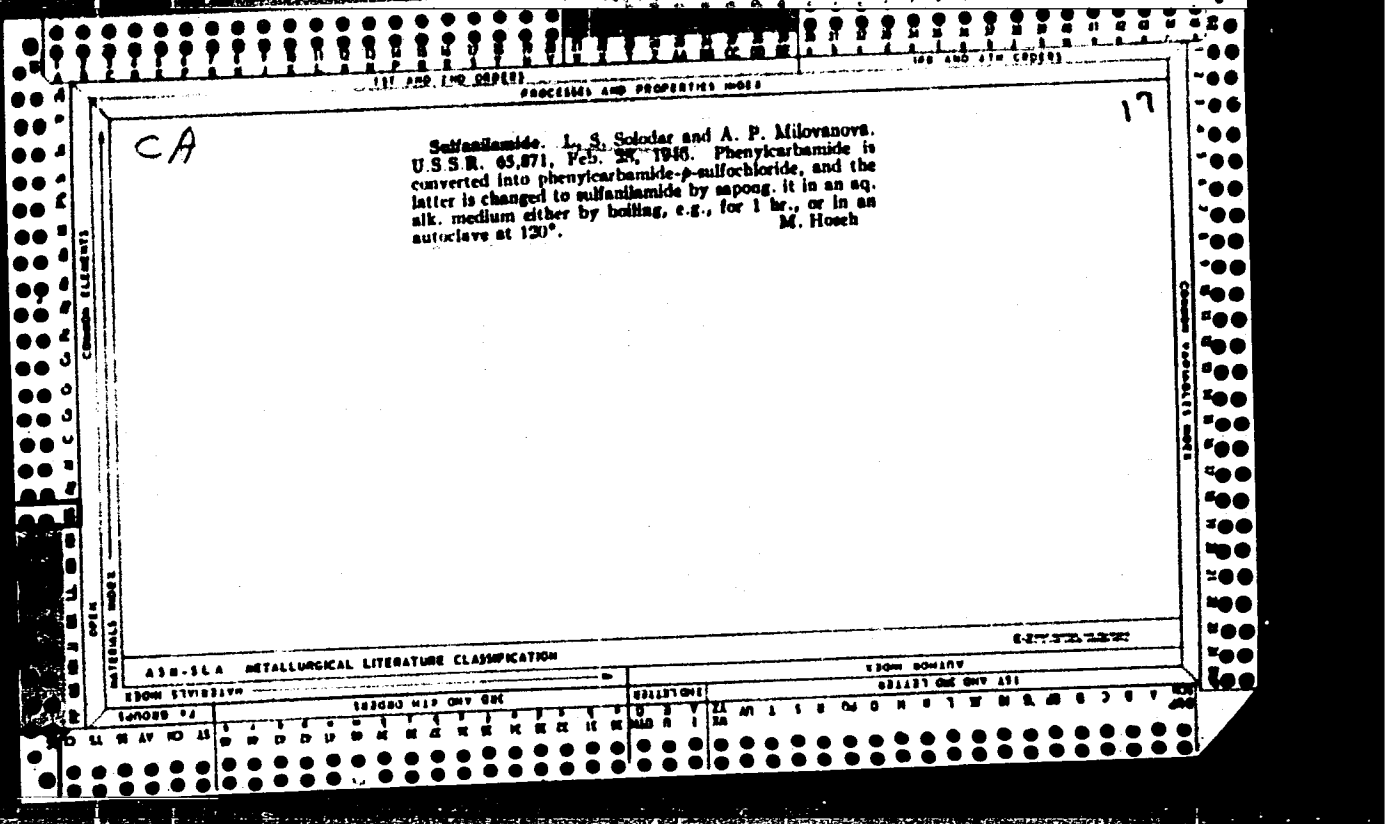
ca 10

acylated p-aminobenzosulfonyl chlorides. L. S. Solod'ar' and A. P. Milovanova. U.S.S.R. 64,734, May 31, 1945. In the production of acylated p-aminobenzosulfonyl chlorides by the action of ClSO<sub>3</sub>H on acylated aniline derivs., the reaction mixt. is poured into H<sub>2</sub>O or a mixt. of H<sub>2</sub>O and ice at 20-50° in order to sep. a large cryst. reaction product. The chloro-sulfonation of acylanilines may be carried out in the presence of such addns. as aromatic hydrocarbons, heterocyclic bases, tertiary aromatic amines, or acylanilines which form low-melting sulfonyl chlorides. The sepn. of sulfonyl chlorides from the reaction mixt. is carried out in a continuous process in an app. of the column type equipped with a stirrer. M. Hosen

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

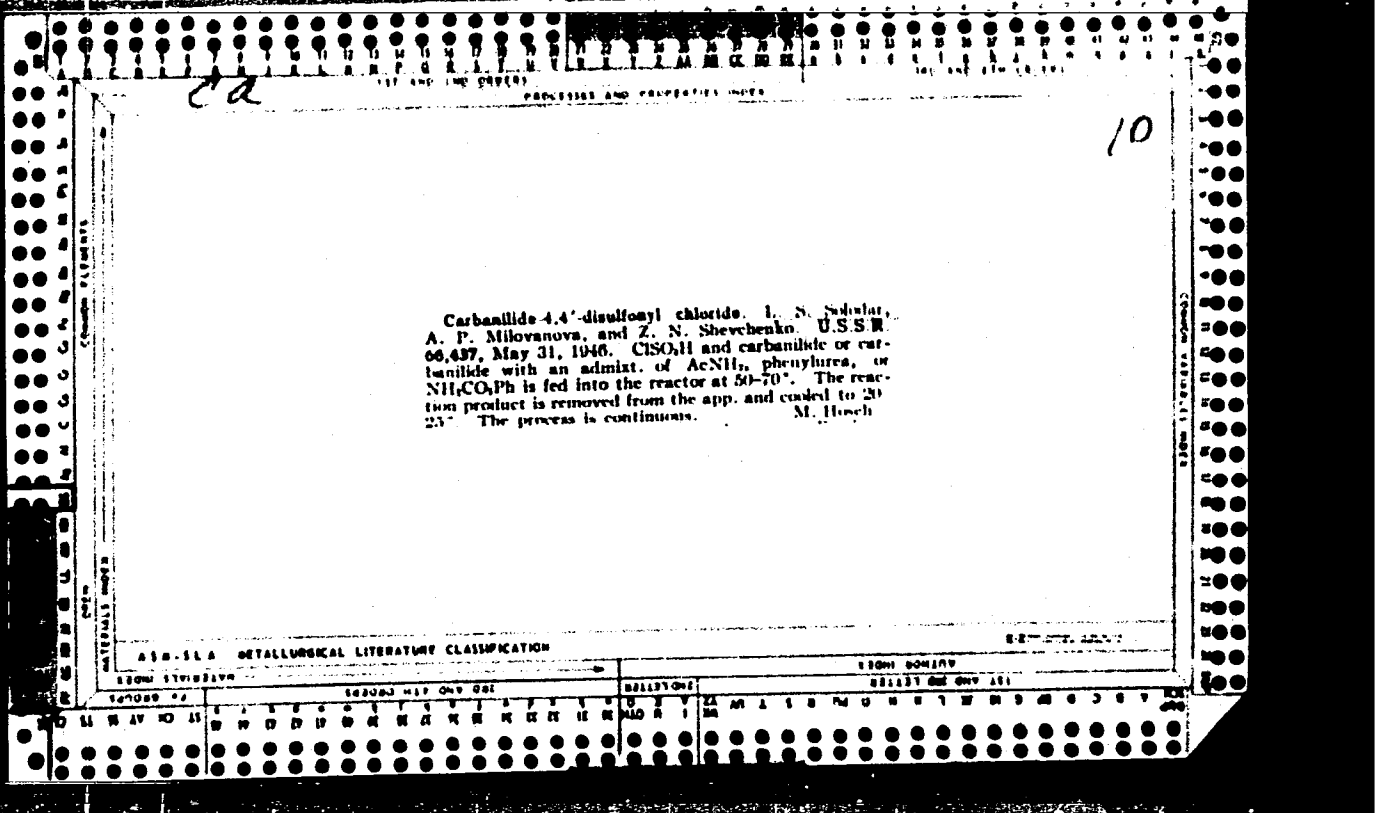


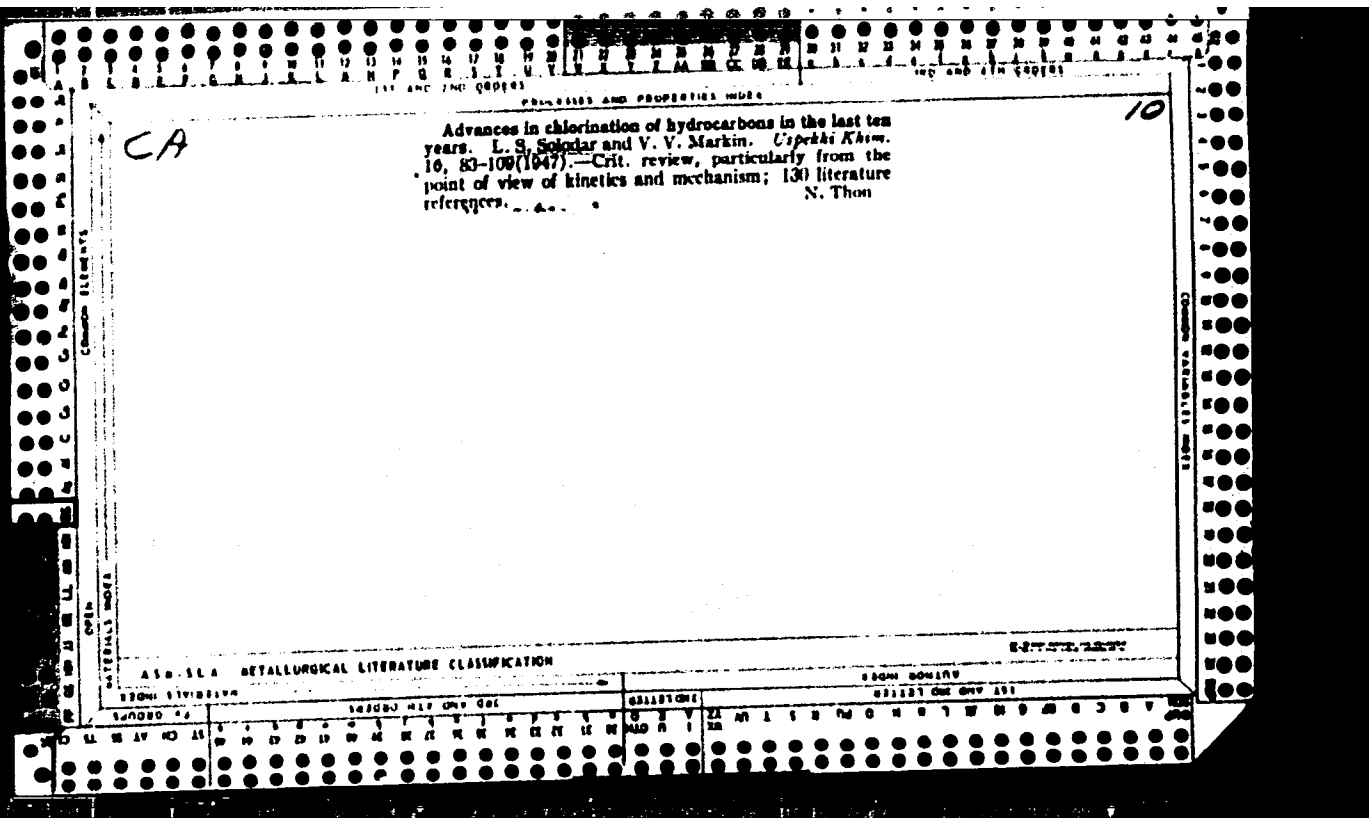


*ca* 10

**2,4-Dichlorobenzoic acid.** I. S. Sokolov, I. Kh. Skala-  
han, G. H. Gorlach, and P. A. Khinskaya: U S S R. 65,-  
880, Feb. 28, 1940. Vapors of 2-chloro-4-nitrotoluene are  
chlorinated at 350-400°, forming 2,4-dichlorobenzoyl  
chloride. The latter is converted by the usual means  
into 2,4-dichlorobenzoic acid. M. Huseh

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION





CA

10

Chlorosulfonation of acyl amides. I. Role of sulfuric acid. L. S. Solodko and Z. N. Shevchenko (Central Lab. Zavolga "Akrikhin"); *Zhur. Priklad. Khim. (J. Applied Chem.)* 22, 506-17 (1949). -In the usual mode of chlorosulfonation of acylamides, such as AcNHPh, PhNHCO<sub>2</sub>H, CO<sub>2</sub>NHPh), the predominant reaction occurs with ClSO<sub>2</sub>H, while the H<sub>2</sub>SO<sub>4</sub> present in the reagent reacts to a limited extent only. Hence, the yields of RSO<sub>2</sub>H do not rise even upon increase of the H<sub>2</sub>SO<sub>4</sub> content in the mixt., provided that the constancy of the ClSO<sub>2</sub>H:H<sub>2</sub>SO<sub>4</sub> ratio is maintained. Heating the sulfonation mixts. above 50-60° leads to conversion of RSO<sub>2</sub>Cl into RSO<sub>2</sub>H, which increases with temp. and is higher for acylamides with carbonyl or carbomethoxy groups than for the Ac deriv.; the rate of chlorosulfonation is similarly increased in these compds. over the Ac deriv. The results, given graphically, indicate that chlorosulfonation of AcNHPh rises up to 70°, falling upon subsequent increase of temp. to 80°, through the interconversion noted above; with PhNHCO<sub>2</sub>H the inflection occurs at 60°. Generally, a longer than necessary reaction period lowers the yield of RSO<sub>2</sub>Cl (essentially linearly) and the drop is most pronounced at higher temps., i.e. with increased conversion to RSO<sub>2</sub>H. Analysis of the reaction mixts. was done by decompn. with ice, filtration of the RSO<sub>2</sub>Cl, its hydrolysis, and detn. of ionic Cl, while the original filtrate is hydrolyzed with hot NaOH and the sulfanilic acid resulting is titrated with NaNO<sub>2</sub>. The diamini-diphenyl sulfone detn. is done by evapn. of the neutralized mass to dryness, extn. with Me<sub>2</sub>CO, addn. of dil. HCl, concn., and titration with NaNO<sub>2</sub>. II. Mechanism. *Ibid.* 874-81 (1949). Chlorosulfonation of AcNHPh and of PhNHCO<sub>2</sub>H at 50°, 60°, 70°, and 80° by the previously described technique (cf. part I), proceeds in 3 stages: the early part of the process, during which a rapid rise of sulfonic acids and sulfonyl chlorides takes place up to 15 mins., is followed by a period during which the yield of RSO<sub>2</sub>Cl continues to rise but the yield of RSO<sub>2</sub>H declines, indicating conversion of RSO<sub>2</sub>H into RSO<sub>2</sub>Cl; the last stage with AcNHPh is characterized by leveling

off of the RSO<sub>2</sub>Cl formation, while with PhNHCO<sub>2</sub>H the process of decrease of RSO<sub>2</sub>Cl takes place with a simultaneous rise of RSO<sub>2</sub>H, especially noted at 60°. AcNHPh behaves analogously at 60°. The results, presented graphically, indicate that the conversion of RSO<sub>2</sub>H into RSO<sub>2</sub>Cl occurs by interaction of an aliquot of the starting material with ClSO<sub>2</sub>H with another mol. of ClSO<sub>2</sub>H, yielding H<sub>2</sub>SO<sub>4</sub> and HCl, however, the HCl balance proves that the formation of this intermediate is excluded, as essentially quant. amts. of HCl are evolved in the 1st step. The transformation in stage 3 is an irreversible reaction of RSO<sub>2</sub>Cl with H<sub>2</sub>SO<sub>4</sub>, apparently by acylolysis of the acyl group on the N; thus, heating *p*-AcNHCO<sub>2</sub>H<sub>2</sub>SO<sub>2</sub>Cl with H<sub>2</sub>SO<sub>4</sub> and ClSO<sub>2</sub>H gives a progressive increase with time and temp. of SO<sub>2</sub>H deriv. at the expense of SO<sub>2</sub>Cl deriv., while the yield of sulfanilic acid upon quenching the mixt. with ice-water rises similarly. Generally, lower temps. favor the preservation of RSO<sub>2</sub>Cl in such acidolyses. The reactions cited above are shown on a flow sheet.

G. M. Kosolapoff



PA 67/49T64

USSR/Chemistry - Chlorosulfonation Anilides Aug 49

"The Mechanism of the Chlorosulfonation of Acylamides," L. S. Solodar, Z. N. Shevchenko, Cen Lab, "Atrikhin" Plant, 8 pp

"Zhur Prik Khim" Vol XXII, No 8

Studied the three-stage dynamics of chlorosulfonation of acetanilide and phenylurethylam at 50, 60, 70, and 90° C: the formation of the acylamide sulfo acid, its subsequent conversion into acylamide sulfo chloride, and the acidolysis of the acylamide groups. Lowered temperatures decreased the

67/49T64

USSR/Chemistry .. Chlorosulfonation Aug 49 (Contd)

acidolysis of the acylamino groups, resulting in greater yields of sulfo chloride. Submitted 15 Mar 49.

67/49T64

SOLODAR, L. S.

MEKHAYLOVA, L.A.; SOLODAR', L.S.; OVCHINNIKOVA, Ye.A.; KOZYREVA, G.V.;  
SAMUROVA, S.I.; YEFREMOVA, L.N.

Reduction of n-nitrosalicylic acid in n-aminosalicylic acid.  
Zhur.prikl.khim. 30 no.4:623-629 Ap '57. (MIRA 10:7)

1. Institut khimicheskikh reaktivov Akademii nauk SSSR.  
(Salicylic acid)

SOLODAR', L.S.; GURVICH, Ya.A.

Scientific research work at Dorogomilovskii Chemical Plant. Zav.  
lab. 26 no.12:1430-1432 '60. (MIRA 13:12)

1. Nachal'nik Tsentral'noy laboratorii Dorogomilovskogo khimicheskogo zavoda (for Solodar'). 2. Nachal'nik fizicheskoy laboratorii Dorogomilovskogo khimicheskogo zavoda (for Gurvich).  
(Chemical laboratories)

SOLODAR, M.B.

SOLODAR, M.B., insh.

Reinforcing steel structures in main departments of open-hearth  
plants. Stroi. prom. 36 no.1:10-14 Ja '58. (MIRA 11:1)  
(Open-hearth furnaces)  
(Precast concrete construction)

SOLODAR', M.B.: DUDAVSKIY, A.I.

Possibilities for lowering construction costs of marine signal  
towers. Mat.po stal'.konstr. no.5:157-164 '59. (MIRA 13'8)  
(Beacons)

SOLODAR', M.B., inzh.

Improve designs of bunkers. Prom. stroi. 38 no.11:30-35 '60.  
(MIRA 13:10)

1. Leningradskoye otdeleniye Gosudarstvennogo proyektonogo instituta Proektstal'konstruktsiya.  
(Ore dressing—Equipment and supplies)

KOROBOV, V.M., inzh.; SOLODAR', M.B., inzh.

More about calculating the three-dimensional work of the steel  
frame of a one-story industrial building. Prom. stroi. 40  
[i.e. 41] no.4:59-61 Ap '63. (MIRA 16:3)  
(Industrial buildings)

SOLODAR', M.B., inzh.

Some problems of design specialization and of the reliability of steel elements. Prom. stroi. 40 [i.e. 41], no.5:28-32 My (MIRA 16:5) '63.

1. Leningradskoye otdeleniye Gosudarstvennogo instituta po proyektirovaniyu, issledovaniyu i ispytaniyu stal'nykh konstruktsiy i mostov.

(Steel, Structural)



SOLODAR', M.B., inzh.; BRYANCHANINOVA, O.A., inzh.

Efficient designs of joints of composite elements. Mont. i  
spets. rab. v stroi. 25 no.1:8-11 Ja '63. (MIRA 16:6)

1. Leningradskoye otdeleniye Gosudarstvennogo proyektnogo  
instituta po proyektirovaniyu, issledovaniyu i ispytaniyu  
stal'nykh konstruktsiy i mostov.  
(Building--Details)

SOLODAR', M.B., inzh.; PLISHKIN, Yu.S., inzh.

Defects in the design of steel elements for conveyor trestles.  
Prom. stroi. 41 no.7:33-36 J1 '64. (MIRA 17:8)

1. Leningradskoye otdeleniye Gosudarstvennogo instituta po  
proyektirovaniyu, issledovaniyu i ispytaniyu stal'nykh kon-  
struktsiy i mostov.

SOLODAN, M.B., inzh.; FLICHKIN, Yu.S., inzh.

Problems of increasing the operational reliability of crane elements.  
Prom.stroi. 42 no.11:9-13 N '64.

(MIRA 18:8)

ANNINSKIY, L.; LIKHAREV, B.; SOLODAR', TS.; KAZANTSEV, I., red.;  
ZHDANOVA, G., tekhn.red.

[Altai reporting; "Literaturnais gazeta" in the virgin land,  
August-September, 1959] Altaiskii reportazh; "Literaturnais  
gazeta" na tselino, avgust-sentiabr' 1959 g. Barnaul,  
Altaiskoe knizhnoe izd-vo, 1960. 197 p. (MIRA 14:4)  
(Altai Territory--Description and travel)

SOLODAR', Ye.N., inzh.

"Reduced cloth weave" for knitted lasting. Leg. prom. 18 no.8:33-34  
Ag '58. (MIRA 11:9)

(Knit goods)

SOLODAR', Ye.N., inzh.

New book on knitting ("Double rib and reverse knitting machines  
in the technology of knitted clothes" by V.N. Esipenko, D.M.  
Potemkin. Reviewed by R.N. Solodar'). Tekst.prom. 19 no.1:87  
Ja '59. (MIRA 12:1)  
(Knitting machines) (Esipenko, V.N.) (Potemkin, D.M.)

L 27717-66 EWT(1) IJP(c) GG/AT

ACC NR: AF6011552

SOURCE CODE: UR/0051/66/020/003/0399/0407

AUTHOR: Ivanova, A. V.; Solodchenkova, S. A.

ORG: none

TITLE: Quantum mechanical calculation of the coefficients of continuous absorption for certain components of strongly heated air

SOURCE: Optika i spektroskopiya, v. 20, no. 3, 1966, 399-407

TOPIC TAGS: air, quantum theory, absorption coefficient, photoelectric effect, wave function, photoionization, free path

ABSTRACT: The authors have carried out a quantum-mechanical calculation of the coefficients of continuous absorption for the ions  $N^{+4}$  and  $O^{+5}$ , which have considerable concentrations in air heated to several hundred thousand degrees. The calculations are based on the method of self-consistent field with allowance for exchange. The temperatures 150,000-800,000K, densities 0.01-10, and spectral region 0.7-50 Ry were covered. Only the photoelectric absorption was taken into account in the calculations, since at the temperatures in question the bremsstrahlung absorption is negligible. The photoionization cross sections used in the calculations were calculated with the aid of Hartree-Fock wave functions previously calculated by one of the authors (Ivanova, Opt. i spektr. v. 16, 925, 1964). For some temperatures and for normal density, the values of the mean free path were also calculated. It is concluded from the results that: (a) Up to 300,000K the principal role in the absorption of air at normal density is played by the ground and first-excited states

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UDC: 535.341.001.1

L 27717-66

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ACC NR: AF6011552

of  $N^{+4}$  and  $O^{+5}$ . Starting with 300,000K, intense photoionization sets in from the excited levels of these ions, and at 500,000—800,000K the contribution due to the excited levels becomes predominant. (b) The excited levels cause the absorption maximum to shift with increasing temperature towards the longer wavelengths. (c) The absorption of the ions  $N^{+4}$  and  $O^{+5}$  lies in the region close to the Planck radiation curve, which occurs for the temperatures 150,000, 300,000, and 500,000K at  $\sim 2.7, 5.5,$  and 9 Ry, respectively. The corresponding mean free paths obtained at 150,000, 300,000, and 500,000K do not agree with the values obtained on the basis of the hydrogen-like approximation. The reasons for the discrepancy are briefly discussed. It is concluded that to reconcile the data it is necessary to make allowance in the quantum-mechanical calculations for other ions present in strongly heated air. The authors thank A. S. Kompaneyets and N. I. Kuznetsova for useful discussions. Orig. art. has: 5 figures, 6 formulas, and 8 tables. [02]

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Card 2/2    BLG



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Dissertation: "Investigation of the Driving Gear of the Cable Drive of an Electric Combine."  
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KULEBAKIN, V.S., akademik, redaktor; BUDZKO, I.A., doktor tekhnicheskikh nauk, redaktor; GANELIN, A.M., kandidat tekhnicheskikh nauk, redaktor; GLEBOVICH, A.A., kandidat tekhnicheskikh nauk, redaktor; DREVS, G.V., kandidat tekhnicheskikh nauk, redaktor; LIBENSON, D.Ya., kandidat tekhnicheskikh nauk, redaktor; SLAVIN, P.M., kandidat tekhnicheskikh nauk, redaktor; SOLODENIKOV, V.N., kandidat tekhnicheskikh nauk, redaktor; SHUMILOVSKIY, N.N., doktor tekhnicheskikh nauk, redaktor; KURDYUKOV, K.P., kandidat tekhnicheskikh nauk, redaktor; KLIMOV, V.A., redaktor izdatel'stva; MOSKVICHEVA, N.I., tekhnicheskly redaktor

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1. Soveshchaniye po avtomatizatsii proizvodstvennykh protsessov v sel'skom khozyaystve, 1954. 2. Institut avtomatiki i telemekhaniki AN SSSR (for Kulebakin). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii sel'skogo khozyaystva (for Glebovich, Solodenikov)

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SOLODENIKOV, V.N., kandidat tekhnicheskikh nauk.

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(Cables)

112-57-7-14610

Translation from: Referativnyy zhurnal, Elektrotehnika, 1957, Nr 7, p 123 (USSR)

AUTHOR: Solodenikov, V. N.

TITLE: Investigating the System of a Cable Take-up Device With a Cable-Reel Drive (Issledovaniye systemy kabelepriyemnogo ustroystva s privodom kabel'nogo barabana)

PERIODICAL: Nauch. tr. Vses. n. -i. in-ta elektrifik. s. -kh. (Scientific Works of the All-Union Scientific-Research Institute for Electrification of Agriculture), 1956, Nr 2, pp 95-122

ABSTRACT: A theoretical investigation is presented of the static and dynamic characteristics of a system comprising a cable take-up device and a cable-reel drive; the system is a part of electric tractors ET-5, ETU-13, and KhTZ-15. An equation of constant cable tension is deduced, and the principal methods of tension regulation are set forth. Static characteristics of the cable take-up device and reel parameters during cable winding and unwinding are presented. Dynamic characteristics of the cable take-up system with non-regulated drive are analyzed, and a differential equation of the system is given. The following

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Investigating the System of a Cable Take-up Device With a Cable-Reel Drive

conclusions are offered: (1) the system comprising the reel (with cable) and the elastic dragging section of the cable is an oscillatory system; (2) natural oscillations of the cable span can be assumed to be continuous; (3) fluctuations in cable tension caused by the natural oscillations of the system are qualitatively influenced by the elastic characteristic of the cable; (4) conditions of cable work on the machine can be considerably improved by using joints with appropriate mechanical characteristics and, by means of a compensator, selecting a suitable elastic cable characteristic in the cable-duct; (5) calculation and analysis of the system with a non-regulating drive (within one cable layer on the reel) can be made with sufficient accuracy by using a linearized system equation.

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PHASE I BOOK EXPLOITATION

SOV/4552

Ivanov, V. A., G. P. Solodenko, I. M. Gissin, and N. N. Ignatenko

Kompleksnaya mekhanizatsiya i avtomatizatsiya na zavode Rostsel'mash (Full Mechanization and Automation at the Rostsel'mash [Rostov-na-Donu Agricultural Machinery] Plant). [Rostov-na-Donu] Rostovskoye knizhnoye izd-vo, 1959. 185 p. Errata slip inserted. 2,000 copies printed.

Ed.: I. V. Zherebkov; Tech. Ed.: M. V. Marinyuk.

**PURPOSE:** This book is intended for technical personnel in plants and design institutes, innovators in production and students of engineering schools of higher education.

**COVERAGE:** The authors present the results of experience gained from the mechanization and automation of the Rostsel'mash Plant. Problems of line production are discussed and ways for solving these problems are considered. The authors describe lines and installations adopted in assembly and press-forging shops. Special attention is paid to the mechanization of organic coating. The final section of the book deals with the full mechanization of foundry processes and

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SOLODENKO, G.P., inzh.; SAPOV, P.M., inzh.; ZHAVORONKO, P.I., inzh.;  
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