

LYSENKO, T.D.; OL'SHANSKIY, M.A.; SINYAGIN, I.I.; GLUSHCHENKO, I.Ye.;
VAHJNTSYAN, I.S.; PREZENT, I.I.; SHCHERBINOVSKIY, N.S.; SHUNKOV,
V.I.; YEVSTIGNEYEV, S.N.; BOCHEVER, A.M.; LITVIN, V.M.; YAYKOVA,
A.T.; PODVOYSKIY, I.I.; SAKS, Ye.I.; KHALIFMAN, I.A.; FEIGINSON,
N.I.; SHCHEGLOVA, Yu.N.; DLUGACH, G.V.; STERNIN, R.A.; LISOVSKAYA,
O.V.; GUBINA, T.I.; ROZENFEL'D, M.I.; TSVETAYEVA, Ye.M.; PARKHO-
MENKO, Ye.V.; NEYMAN, N.F.

Sofia Iakovlevna Voitinskaya; an obituary. *Agrobiologiya* no.4:121
Jl-Ag '58. (MIRA 11:9)
(Voitinskaya, Sofi'ia Iakovlevna, 1898-1958)

FEIGINSON, N.I.

A good manual ("Course of lectures on the genetics of farm animals"
by A.S. Vsiakikh. Reviewed by N.I. Feiginson). Agrobiologia no.5:157
S-O ' 58. (MIRA 11:11)
(Domestic animals) (Genetics) (Vsiakikh, A.S.)

FEYGINSON, N.I., kand. sel'skokhoz. nauk

Two trends in the biological science. Biol. v shkole no.4:75-82
Jl-Ag '59. (MIRA 12:11)

1, Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Genetics) (Science---Philosophy)

FEYGINSON, N.I.

Lamarck, Darwin and Haeckel and the present state of the
problem concerning the inheritance of acquired properties.
Agrobiologia no.5:722-732 S-0 '59. (MIRA 13:2)

1. Kafedra genetiki i seleksii Moskovskogo gosudarstvennogo
universiteta.

(Lamarck, Jean Baptiste Pierre Antoine De Monet De, 1744-1829)

(Darwin, Charles Robert, 1809-1882)

(Haeckel, Ernst Heinrich Philipp August, 1834-1919)

FEYGINSON, N. I., kand. sel'skokhoz. nauk

Darwin and modern times. Dokl. Akad. sel'khoz. 24 no. 10:3-8
'59. (MIRA 13:2)

1. Kafedra genetiki i selektsii Moskovskogo gosudarstvennogo
universiteta imeni M. V. Lomonosova.
(Darwin, Charles Robert, 1809-1882)
(Biology)

FEYGINSON, N.I.

Concerning A. Durrant's and H. Tyson's article. *Agrobiologia*
no.4:557-558 J1-Ag '60. (MIRA 13:8)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova,
kafedra genetiki i seleksii.
(Flax breeding) (Genetics)

FEYGINSON, N.I.

More about a Durrant's works. Agrobiologia no.6:830-831 M-D '60.
(MIRA 13:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova,
kafedra genetiki i seleksii.
(Flax breeding)

FEYGINSON, N.I.

Analysis of the negative results of some experiments in vegetative
hybridization. Bot. zhur. 45 no.10:1476-1487 0 '60.

(MIRA 13:11)

1. Moskovskiy gosudarstvennyy universitet.
(Grafting)

FURMAN, Aleksey Yevgen'yevich; FEYGINSON, N.I., otv. red.; POMALEN'KAYA,
O.T., red.; YERMAKOV, M.S., tekhn. red.

[Origin and formation of the dialectic conception of development in
biology] Voznikovenie i formirovanie dialekticheskoi kontseptsii
razvitiia v biologii. Moskva, Izd-vo Mosk. univ., 1961. 282 p.
(MIRA 14:8)

(Biology--Philosophy)

OL'SHANSKIY; LYSENKO; NAZARENKO; AVAKYAN; VARUNTSYAN; GLUSHCHENKO; PREZENT;
VARENITSA; Balyura; OZIRSKIY; TOMASHEVICH; SHAIN; TARKOVSKIY;
TRET'YAKOV; NOVIKOV; FEYGINSON; TELYATNIKOV; KHALIFMAN;
KONSTANTINOVA; SMIRNOV; VOINOV; STEPANOV; SHOSTAK; BALABAN;
CHUBASOVA; TKUCHUK

Timofei Ignat'evich Belash. Agrobiologiya no. 3:447-448 My-Je '61.

(Belash, Timofei Ignat'evich, 1901-1961)
(MIRA 14:5)

FEYGINSON, N. I.

Problem of the exceptional genetic role of deoxyribonucleic acid.
Agrobiologiya no.3:454-472 My-Je '62. (MIRA 15:10)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(NUCLEIC ACIDS) (GENETICS)

FEYGINSON, N.I., kand.sel'skokhozyaystvennykh nauk

For materialistic biology. Mol.v shkole no.6:71-79 N-D '62.
(MIRA 16:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Genetics)

FEYGINSON, Noy Il'ich; GLUSHCHENKO, I.Ye., akademik, red.; TETYUREVA, I.V., red.; DEYEVA, V.M., tekhn. red.

[Corpuscular genetics] Korpuskuliarnaia genetika; kriticheski obzor. Moskva, Sel'khozizdat, 1963. 542 p.

(MIRA 16:6)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Lenina (for Glushchenko).

(Genetics)

KOMMONER, B. [Commoner, B.], prof. fiziologii rasteniy; FEYGINSON, N.I.
[translator]

In defense of biology. Agrobiologia no.3:351-358 My-Je '63.
(MIRA 16:7)

1. Predsedatel' Komiteta po molekulyarnoy biologii Vashingtonskogo
universiteta, Sent-Luis, Missouri, SSHA.
(Biology--Philosophy)

FEYGINSON, N.I.

Collection on molecular genetics. Agrobiologia no.6:931-945
N-D '65. (MIRA 18:12)

L 24713-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(k)/EWP(b) Pf-4 AEDC(b)/SSD/AFJL/
AFM(a)/AFPS(p) JI/HW
ACCESSION NR: AR5000587 8/0127/6/1001/1001/1001/1001

... z. Metallurgiya. sv. 1., A ...
... Tankovskiy, V. M.; Kheyfets, G. N.; Feygin, V. N.;
... P.

TITLE: Laboratory vacuum furnace with manipulator

CITED SOURCE: Sb. Proiz-vo trub, vy*p. 12. M., Metallurgiya, 1964, 74-77

TOPIC TAGS: vacuum furnace, vacuum chamber, heat treatment, pipe <

TRANSLATION: A horizontal resistance furnace with a manipulator and a cooler in a vacuum chamber was designed and built in the Ukrainian Scientific Research Pipe Institute for the purpose of obtaining a series of parameters and verifications on the efficiency of heat treatment of pipes under different degrees of vacuum in a vacuum chamber. The furnace body consisted of pipe with diameter 200 x 10 mm of stainless steel rolled into the form of a cone at the forward end. On the cover of the body were placed 2 copper conduc-

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tors, 3 heaters, a handle for the door of the furnace, and an arrangement for inserting a thermocouple. The heater, made of molybdenum or a Nichrome type alloy, was placed in the annular gap between two korraks cylinders. These cylinders were strengthened with two face flanges of the same material. The front flange has an opening for inserting the samples into the heating chamber, which has a volume 20 mm in diameter and 120 mm long. The opening is closed by a door with a slot for supporting the sample. The axis of the door passes outside of the external heating baffle, and is led out through a seal in the roof of the furnace. Two external heating baffles made of stainless sheet steel are fastened to the face clamps of the baffles and are centered relative to the furnace with six screws. The covering of a stationary thermocouple is placed in the openings of the external baffles. Through the furnace door screen there are led two copper conducting rods insulated with asbestos casings, connected to the heater with a copper lead. The furnace is made of copper and is located in the rear part of the furnace. The manipulator is in the form of a "tube within a tube", where the hollow shaft of the manipulator slides in a bronze bearing in the wall of the furnace body and moves the sample support inside

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ACCESSION NR: AR5000587

the vacuum chamber. Feeding of current to the heater is carried out through an automatic transformer and a reducing transformer. Regulation of the heating up to the desired temperature is effected by switching on and off the automatic transformer in the circuit of resistors of an automatic type PSR-1 potentiometer operating with a tungsten-molybdenum thermocouple. The degree of vacuum in the working chamber is measured with a LT-2 thermocouple and an LM-2 ionizing tube in conjunction with a VNT-1 vacuum meter. A general diagram of the heating apparatus is given, along with a description of the vacuum furnace. The procedure for producing a vacuum is described.

SUB CODE: MM

ENCL: 00

Card 3/3

L 3995-66 ENT(m)/EWA(d)/I/EWF(t)/ENP(k)/ENP(z)/EWP(b)/EWA(c) JD/HW

ACCESSION NR: AR5022786

UR/3164/64/000/014/0084/0089

AUTHOR: Furs, B. A. (Engineer); Yankovskiy, V. M. (Candidate of technical sciences); Shkurenko, A. A. (Engineer); Paley, B. Ya. (Engineer); Vasilenko, A. Ya. (Engineer); Feyzulin, V. N. (Engineer)

TITLE: Vacuum electrical resistance unit for heat treatment of tubes

SOURCE: Dnepropetrovsk. Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskotekhnologicheskii institut trubnoy promyshlennosti. Proizvodstvo trub, no. 14, 1964. Sbornik statey po teorii i praktika trubnogo proizvodstva (Collection of articles on the theory and practice of pipe production), 84-89

TOPIC TAGS: steel tube, alloy tube, heat resistant steel, heat resistant alloy, tube heat treatment, vacuum heat treatment

ABSTRACT: An electrical resistance furnace for heat treatment of heat-resistant steel and alloy tubes has been built by the Ukrainian Scientific Research Institute for Tubes. The furnace consists of a vacuum chamber, a vacuum system, a movable tube rack, and a rack pulling mechanism. The vacuum chamber is a cylinder, 500-mm inside diameter and 3000 mm long, with one fixed and one movable end closure. It is made of an austenitic steel. The vacuum system is capable of producing and maintaining a vacuum of $5 \cdot 10^{-5}$ mm.Hg. The tube rack can hold one or several tubes

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ACCESSION NR: AT5022786

up to 40 mm outside diameter and 500-2000 mm long, with a wall thickness of 0.5 to 1.5 mm, or a container filled with small-diameter tubes. In the former case the tubes are heated directly by passing electric current; in the latter case the current is passed through the container. The power is supplied by two single-phase transformers with a secondary voltage range of 14-160 V. The unit insures a temperature of 2000-2300C and heat treats up to 125 tubes per shift, depending on size and material. Orig. art. has: 4 figures. (MS)

ASSOCIATION:

SUBMITTED: 00

ENCL: 00

SUB CODE: IE

NO REF SOV: 003

OTHER: 000

ATD PRESS: 4/19

PC
Card 2/2

L 04154 67 EWT(w)/T/EWP(t)/ETI - IJP(c) JD

ACC NR AR6016528

SOURCE CODE: UR/0276/65/000/012/B039/B039

AUTHOR: Kheyfets, G. N.; Yankovskiy, V. M.; Kadinova, A. S.; Shkurenko, A. A.;
Feyglin, V. N.; Tikhonyuk, A. N. 33
DW

TITLE: Determining the basic parameters for cooling of gas cylinders during jet annealing

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya, Abs. 12B294

REF SOURCE: Sb. Proiz-vo trub. Vyp. 15. M., Metallurgiya, 1965, 72-79

TOPIC TAGS: liquid gas container, annealing, cooling 15

ABSTRACT: A method is proposed for studying the process of jet annealing of thick-walled gas cylinders to obtain data necessary for designing jet cooling devices. An experimental laboratory installation is designed and manufactured for individual and simultaneous water-cooling of the outer and inner surfaces of a gas cylinder while it is rapidly rotated to equalize cooling along the perimeter. The schematic diagram and technical characteristics of the experimental installation are given. Practical curves are plotted for cooling along the cross section of the cylinder wall, the rate of flow of the coolant is determined and a method is found for cooling the cylinder wall at the required rate. Heat treatment conditions are established for cylinders made of 40Kh steel. The workpiece is heated to the prequenching temperature of 870°C

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UDC: 621.785.6

L 04154-67

ACC NR: AR6016528

in a batch-type furnace, held at this temperature for 40 minutes, cooled in a bilateral (inside and outside) jet cooling device, annealed at a temperature of 500°C and held at this temperature for 2 hours. It is shown that bilateral cooling gives the cylinder practically identical mechanical properties with respect to length and cross section and that these properties satisfy technical specifications. Schematic diagrams are developed for cooling devices to be used in annealing high-capacity gas cylinders. 6 illustrations, 1 table, bibliography of 3 titles. [Translation of abstract]

SUB CODE: 13

Card 2/2 *HLH*

KHEYFETS, G.N., kand. tekhn. nauk; YANKOVSKIY, V.M., kand. tekhn. nauk;
SOBKIN, I.I., kand. tekhn. nauk; KADINOVA, A.S., inzh.; FEYGLIN,
V.N., inzh.; TIKHONYUK, A.N., inzh.; SHKURENKO, A.A., inzh.;
KHOMENKO, A.G., inzh.

Steam hardening of high-capacity cylinders. Stal' 25 no.8:849-
852 S '65. (MIRA 18:9)

L 4951-66 EWT(1)/EWP(e)/EPA(s)-2/EWT(m)/ENP(i)/ENP(b) IJP(s) GOST

ACC NR: AP5025717

SOURCE CODE: UR/0286/65/000/018/0010/0071

AUTHORS: Aslanova, M. S.; Syritskaya, Z. M.; Foyknar, S. Ya.

178
33

ORG: none

TITLE: Glass. Class 32, No. 174779¹⁵ announced by State Scientific Research Institute of Glass [Gosudarstvennyy nauchno-issledovatel'skiy institut stekla]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 70-71

TOPIC TAGS: glass, dielectric permeability, thermal stability, chemical stability

ABSTRACT: This Author Certificate presents a method for obtaining a glass of high thermal and chemical stability, high dielectric permeability, and low temperature of cooking. The components making up the glass are taken in the following proportions (in wt %): P₂O₅--30-40, TiO₂--51-60, SiO₂--3-6, and less than 2% of N₂O₅.

SUB CODE: MI/

SUBM DATE: 02Nov64

Card 1/1

UDC: 666.112.92:546.18

07011587

L 35922-66 EWT(m)/EWP(e) WW/NH

ACC NR: AP6012132 (A) SOURCE CODE: UR/0413/66/000/007/0051/0051

35
4

INVENTOR: Aslanova, M. S.; Syritskaya, Z. M.; Feykners, S. Ya.;
Zak, A. F.; Khomutov, A. I.

ORG: none

TITLE: Glass. Class 32, No. 180317 ¹ announced by All-Union Glass Fiber
Research Institute (Vsesoyuznyy nauchno-issledovatel'skiy institut steklyannogo volokna)

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
no. 7, 1966, 51.

TOPIC TAGS: glass, glass composition, GLASS FIBER, GLASS PROPERTY

ABSTRACT: An Author Certificate has been issued describing the
composition of glass containing P₂O₅, SiO₂, TiO₂, Al₂O₃, MgO, which
is intended for the manufacture of glass fiber. To produce a fiber
with high absorption properties, the following wt. (%) of the above
components are suggested: P₂O₅, 40.0-55.0; SiO₂, 32.0-43.0; TiO₂,
4.0-6.0; Al₂O₃, 3.0-8.0; MgO, >1.0; and CaO, 3.0-5.0. [LD]

/Translation of abstract/

SUB CODE: 11/ SUBM DATE: 12Feb65

Card 1/1 *llb*

L 20633-66 EWI(n)/EWP(e) WH/WW

ACC NR: AP6011225

SOURCE CODE: UR/0413/66/000/006/0062/0062

INVENTOR: Aslanova, M. S.; Syritskaya, Z. M.; Feykners, S. Ya.

ORG: none

TITLE: Chemical- and heat-resistant glass. Class 32, No. 179885. [announced by
All-Union Scientific Research Institute of Glass Fiber (Vsesoyuznyy nauchno-
issledovatel'skiy institut steklyannogo volokna)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 62

TOPIC TAGS: chemically resistant glass, heat resistant glass, glass fiber

ABSTRACT: An Author Certificate has been issued for chemical- and heat-resistant glass for the manufacture of glass fibers resistant to aluminum phosphate binder. The glass has the following composition: P_2O_5 , 22-32%; TiO_2 , 64-88%; SiO_2 , 1-4%; Nb_2O_5 , not over 2%. In addition to these ingredients the glass contains: Cr_2O_3 , 1-4%; WO_3 , not over 1%. [BO]

SUB CODE: 11/ SUBM DATE: 19Feb65/ ATD PRESS: 4225

Card 1/1

UDC: 666.112.92:546.18'28'78'82'882

170000
BRUKER, Z.I.; FEYLER, A.O.; KASHIROV, V.A.

Using semiconductor thermistors with resistance thermometers in
measuring and regulating temperatures in dies. Izv. tekh. no.3:
56-58 My-Je '57. (MLRA 10:8)
(Thermometry) (Thermistors) (Die casting)

FEYLER, G.O., inzhener; VIL'MAN, B.P., inzhener.

**Wear resistance of disk brakes built into electric motors.
Vest.elektroprom. 27 no.11:60-64 N '56. (MLRA 9:12)**

**1. Zavod "Dinamo."
(Electric motors) (Brakes)**

FEYLER, G.O.

8(2)

PLANE I BOOK EXPLANATION 309/1955

Sovetskoye po elektricheskii kontaktas. Moscow, 1958.

Kharakteristiki kontaktov, trudy sovetskikh (Electrical Contacts; Transactions of the Conference) Moscow, Gosenergoizdat, 1958. 303 p. 4,150 copies printed.

Mitralnaya knozhka: B.F. Stecher (Resp. Ed.), V.V. Usov, R.S. Kuznetsov, I.Ye. Babitskiy, and Z.N. Kirillova; Eds.: I.Ye. Babitskiy, Ivan. Ed.: Kir. Forman.

REMARKS: This collection of articles is intended for engineers and technicians designing, developing and operating electrical apparatus and is concerned with electric contact materials. It may also be useful in scientific research institutes and laboratories.

COMMENT: This book comprises reports delivered at the Electric Contacts Conference held in Moscow in November, 1956. These papers cover physical processes occurring during connecting or disconnecting, methods of designing and testing electric contacts, production and characteristics of contact materials. During this conference, the author of this report (G.O. Feyler) participated in the discussion and the presentation of papers.

to discuss problems of electric contacts, which are the components of electric apparatus primarily influencing the reliability of electric systems, especially 4-4 control systems. Their physical, thermal, mechanical and chemical processes have still not been well analyzed. References are given at the end of most of the reports.

II. DESIGN : APPLICATIONS AND TESTING METHODS

Feyler, G.O. (Zavod "Dinamo," Moscow - Moscow "Dinamo" Plant) Wear Resistance of Contacts in D-c Contactors and Controllers 135

The author describes the method of testing wear resistance of contacts at the "Dinamo" Plant in Moscow and proposes that all other plants adopt this method as a standard one to enable the comparison of test results.

Gordon, A.V. Methods of Testing the Resistance to Wear of Electric Contacts in Alternating Current Contactors 140

The author reports the results of work he carried out along with engineers E.V. Izrael, M.A. Prany, V.P. Shcherba, and others in the design of contactors for testing aircraft DC contacts. This method permits reproduction of the testing conditions with real operating conditions. He suggests applying this method for testing contactors of general industrial use.

Riz, Y.I. and M.A. Gurevich. (Zavod "MPE-1," Moscow "MPE-1 Plant") Contacts of Vibrator Voltage Regulators 156

The authors summarize the results of investigations they carried out in the Electric Machine Laboratory of the "MPE-1" Plant along with Engineers Ye.E. Shvedov, V.I. Khramin, Ye.M. Levit, L.S. Reyer, R.V. Gorlayr, G.G. Sushkova on operating conditions of contacts in vibrator voltage regulators of automobile generators, on the design of contact fittings and on various pairs of contact metals.

III. PRODUCTION AND CHARACTERISTICS OF CONTACT MATERIALS 172

Al'tman, A.B., I.P. Melnikovich, and K.S. Bystrya. (Nauchno-Issledovatel'skiy Institut Elektromekhaniki) Methods of Producing Special Alloys for the Electrical Industry 172

Sintered metals are presently the most suitable contact materials for high-duty circuit-breakers. The authors explain the technical requirements, describe the structure of the compositions, methods of production, characteristics and applications.

Frankenrich, I.W., and O.K. Todorovich. (Institut Metallurgii i Spetsial'nogo Splyavov AN DSSR - Institute for Special Metals and Special Alloys, USSR Academy of Sciences) Production Methods of Sintered-Metal Electric Contacts 186

The authors describe the results of their investigation of the composition of various methods of producing sintered metals.

Usov, V.V. and Murav'yeva, Ye.M. (Nauchno-Issledovatel'skiy Institut Elektromekhaniki) Method for Protection of Contact Compositions. Thermodynamic Calculation of Higher Temperature Results in Structure Similar to that Obtained by the Thermodynamic Power Method. The authors explain this thermochemical method and its advantages. 199

Al'tman, A.B., and K.D. Bystrya. (Scientific-Research Institute for the Electrical Industry) Internal Structure of Wear-Resistant Electric Contacts 214

The authors discuss their investigation of the influence of internal structure of heterogeneous materials on wear resistance. They paid special attention to the alloys Ag-Cu, Ag-Si-Mg, and Ag-Al.

Card 8/11

FEYLER, G. O.

AUTHOR: Feyler, G.O., Engineer

110-58-5-1/25

TITLE: The Resistance to Wear of the Contacts of Direct-current Contactors and Controllers (Iznosoustoychivost' kontaktov kontaktorov i kontrollerov postoyannogo toka)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Vol 29, Nr 5, pp 1 - 4 (USSR).

ABSTRACT: During the last two years, the apparatus laboratory of the Dinamo Works has tested the resistance to wear of different contact materials. The tests were made on direct-current contactors; the main technical data are in Table 1. The following materials were tested:

- a) Contacts based on silver; silver (S), silver with cadmium oxide (OK or SOK), silver with nickel (SN);
- b) Contacts based on copper: copper (M), oxygen-free copper (MB), cadmium copper (MK), copper with cadmium oxide (OK-M), copper with cadmium oxide and added silver (S-OK-M), copper with iron (Zh-M), copper with tungsten (V-M).

The tests showed that the main factors governing the wear are: the current, the intensity of magnetic blow-out, the time that the arc is on the contacts and the vibration of the contacts. If the voltage is above 50 - 100 V, it has little effect on wear and so the tests were made at the minimum standard voltage

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110-58-5-1/25

The Resistance to Wear of the Contacts of Direct-current Contactors and Controllers

of 100 - 120 V. If magnetic blow-out is used, load inductance has little influence on contact wear when contacts are opened. However, when a d.c. circuit is closed the lower the inductance the greater the rate of rise of the current to its final value and, therefore, the greater the wear.

Tests on contact materials are best made on the actual apparatus. This has the additional advantage that simultaneous tests can be made on other parts of the equipment but the inductance and voltage of the circuit must then be of normal value. Contact wear is best estimated by loss of weight or volume for one opening and closing of the circuit. This value is called the specific wear. The relative resistance to wear of a material is defined as the ratio of the specific wear of that material to the specific wear of the reference base material, silver or copper. Wear resistance is, of course, not the only important factor in selecting contact material; in particular, the contact resistance should be low and stable. The material should also possess high resistance to contact welding.

The results of wear-resistance determination on contact materials

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110-58-5-1/25

The Resistance to Wear of the Contacts of Direct-current Contactors and Controllers

using a contactor type KPD-103 are given in Table 2. The tests were conducted by Engineer S.A. Shterenberg and Engineer I.S. Gorchakova. The contactor made and broke a current of 150 A at 220 V; the circuit inductance was 25 mH. The operating rate was 400 per hour and the arc remained on the contacts for 2 - 5 millisees. From the results, it is concluded that contacts SOK have the highest resistance to wear and are six times better than copper. Silver contacts wear almost twice as much as SOK contacts. Cadmium-copper contacts are the best among those based on copper.

Table 3 gives wear test results on contact materials using different types of contactor. In all cases the temperature of the contacts during the tests was 70 - 80 °C. Table 4 gives the results of tests on the same materials operating under the following different conditions: a) making and breaking a current of 150 A; b) making a current of 375 A and breaking 150 A. The arc was on the contacts for 2 - 5 milliseconds. From the results it is concluded that:

a) when making 2.5 times rated current contact wear increases by about 30%. With different contactors, the

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The Resistance to Wear of the Contacts of Direct-current Contactors and Controllers

specific wear of contacts ranges from 17 - 30 μg , hence good design may double contact life. Contacts OK-15 are worse than contacts SOK.

A graph of the relationship between the specific wear of contacts and the contactor current is shown in Fig.1. In this case rated current is made and broken; different types of contactor were used for the lower and higher points on the curves. Table 5 gives the results of tests of contact materials on the direct-current controller type NP-150. It will be seen from this table that the resistance to wear of the controller contacts is much worse than that of the contactor contacts.

In order to verify the stability of operation of contacts, after every 50 000 operations, determinations were made of the temperature rise and contact resistance when rated current is passed for 6 hours. Heating-test results on contactor type KPD-103 are given in Figure 2. Contact resistance at the end of heating tests are given in Table 6. The contacts were not clean. The heating of worn contacts was of the same order in copper and silver contacts. Contacts with a high content of tungsten have very high

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110-58- 5-1/25

The Resistance to Wear of the Contacts of Direct-current Contactors
and Controllers

contact resistance and they heat excessively after repeated
short-time operation. There are 2 figures and 6 tables.

ASSOCIATION: Zavod "Dinamo" (Dinamo Works)

SUBMITTED: August 28, 1957

Card 5/5

KALINKIN, Vladimir Sergeyevich; FRYLER, Georgiy Oskarovich; SINAYSKIY,
M.M., red.; SHIKIN, S.T., tekhn.red.; BORUNOV, N.I., tekhn.red.

[Hoisting electromagnets] Gruzopod'emnye elektromagnity. Moskva,
Gos.energ.isd-vo, 1960. 31 p. (MIRA 14:1)
(Hoisting machinery) (Electromagnets)

KALINKIN, Vladimir Sergeevich; FEYLER, Georgiy Oskarovich; TAYTS,
A.A., red.; VAGIN, A.A., red. izd-va; ISLENT'YEVA, P.G.,
tekhn. red.

[Electromagnets for electric cranes]Pod"emnye elektromagnity.
Moskva, Metallurgizdat, 1962. 87 p. (MIRA 16:2)
(Electric cranes) (Electromagnets)

BELEN'KIY, G.I.; BREYTER, M.Ye.; IVANOV, V.M.; KALINKIN, V.S.;
KOZHUSHKEVICH, V.G.; PETRAKOVSKIY, V.M.; RABINOVICH, A.A.;
RUBINSKIY, I.A.; SINAYSKIY, M.M.; FEYLER, G.O.;
KHOROSHILKIN, L.L.; KOMAR, M.A., red.; BUL'DYAYEV, N.A.,
tekhn. red.

[Electrical equipment of cranes] Elektricheskoe oborudova-
nie kranov. Moskva, Gosenergoizdat, 1963. 399 p.

(MIRA 16:12)

1. Kollektiv inzhenerov moskovskogo zavoda "Dinamo" imeni
S.M.Kirova (for all exopt Komar, Bul'dyayov).

(Cranes, derricks, etc.--Electric equipment)

FEYMAN, I. I.

23373 Iz Istorii Razvitiya Otechestvennoy I'nyanoy Promyshlennosti. Tekstil.
Prom-st', 1949, No. 6, c. 6-7.

SO: LETOPIS NO. 31, 1949

FEYMAN, I.I.

FEYMAN, I.I.; ZERNOVA, Ye.I.

Processing ramie fiber on flax spinning equipment. Tekst.prom.
14 no.6:26-29 Je '54. (MLRA 7:7)

1. Dotsent Kostromskogo tekstil'nogo instituta (for Feyman)
2. Zaveduyushchaya pryadil'noy fabrikoy l'nokombinata im. Lenina (for Zernova)
(Ramie) (Spinning machinery)

FEYMAN, I.I., dotsent; ZERNOV, B.L.; ZERNOVA, Ye.I., inzhener

Hemp processing on flax-spinning machinery. Tekst.prom.15 no.7:14-16 J1'55. (MLRA 8:11)

1. KTI (for Feyman) 2. Zaveduyushchiy Tsentral'no-nauchnoy issledovatel'skoy laboratorii Glavl'na (for Zernov) 3. Kostromskiy l'no-kombinat imeni Lenina (for Zernova).
(Hemp)

FEYMAN, I.I., kand. tekhn. nauk, dots.

~~Relation of yarn diameter to its number and twist.~~ Izv. vys. ucheb.
zav.: tekhn. tekst. prom. no.1:27-34 '58. (MIRA 11:5)

1. Kostromskoy tekstil'nyy institut.
(Yarn--Tables, calculations, etc.)

FEYMAN, I.I., kand.tekhn.nauk; GRUBOV, A.F.; GAGOROKHINA, M.K., studentka;
MYASNIKOVA, N.V., studentka

Choosing optimum weft twists for burlap fabrics. Tekst.prom. 18
no.5:70-71 My '58. (MIRA 11:5)

1. Glavnyy inzhener Narvskoy l'no-dshutovoy fabriki (for Grubov).
2. Kostromskoy tekstil'nyy institut (for Gagarochkina, Myasnikova).
(Burlap)

GINZBURG, Lev Natanovich, prof.; DVERNITSKIY, Iosif Melent'yevich, inzh.;
TARASOV, S.V., retsenzent; SLUTSKOV, I.K., retsenzent; FEYMAN,
I.I., retsenzent; LYASHENKOV, I.K., retsenzent; VOLGIN, ~~A.A.~~,
retsenzent; GORDEYCHIK, G.M., red.; SOKOLOVA, V.Ye., red.;
MEDVIDEV, L.Ya., tekhn.red.

[Spinning of bast fibers and the manufacture of twisted products]
Priadeniye lubianykh volokon i proizvodstvo kruchenykh izdelii.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po legkoi promyshl., 1959.
549 p. (MIRA 12:8)

1. Kafeyra pryadeniya l'na KTI (for Slutskov, Feyman, Lyashenkov,
Volgin).

(Bast)

(Cordage)

FEYMAN, I.I., dotsent

Functional relation of strength indices, number and degree of
twist for linen yarn. Izv.vys.ucheb.zav.; tekhn.tekst.prom.
no.1:41-50 '59. (MIRA 12:6)

1. Kostromskoy tekstil'nyy institut.
(Yarn--Testing) (Linen)

SAL'MAN, Semen Il'ich; LERMAN, D.I., retsenzent; ZUBCHANINOV, V.V., retsenzent; FEYMAN, I.I., retsenzent; KOPELEVICH, Ye.I., red.; SHAPENKOVA, T.A., tekhn.red.

[Planning and design of flax-spinning factories] Proektirovanie l'NOPriadil'nykh fabrik. Pod red. D.I.Libermans. Moskva, Izd-vo nauchno-tekhn.lit-ry RSFSR, 1960. 315 p.
(MIRA 14:4)

(Flax) (Textile factories)

FEYMAN, I.I.

Problems in yarn construction. Izv.vys.ucheb.zav.; tekhn.tekst.
prom. no.6:149-151 '60. (MIRA 14:1)

1. Kostromskoy tekstil'nyy institut.
(Yarn)

FEYMAN, I.I.

Relationship between the clamping length and strength of yarn. Izv.
vys. uchab. zav.; tekhn. teks. prom. no. 2:17-23 '61. (MIRA 14:5)

1. Kostromskoy tekstil'nyy institut.
(Yarn--Testing)

FEYMAN, I.I.

Designing the fittings of preparatory and carding machinery of
the flax, hemp, and jute industry. Izv.vys.ucheb.zav.; tekhn.
tekst.prom. no.3:50-56 '61. (MIRA 14:7)

1. Kostromskoy tekstil'nyy institut.
(Textile machinery)

FEYMAN, I. I.

Debatable problems in the methods of calculating the tensile strength of products made with fibrous materials. Izv. vys. ucheb. zav.; tekhn. tekst. prom. no.4:26-31 '62.
(MIRA 15:10)

1. Kuznetskiy tekhnologicheskiy institut.

(Yarn)

FEYMAN, I.I.

Comparison analysis of formulas proposed for the strength calculation
of rayon cord. Izv.vys.ucheb.zav.; tekhn.tekst.prom. no.1:27-33 '63.
(MIRA 16:4)

1. Kostromskoy tekhnologicheskoy institut.
(Rayon spinning) (Tire fabrics)

FEYMAN, I. I.

Comparison analysis of the formulas proposed for the calculation of the strength of acetate and viscose yarns. Izv. vys. ucheb. zav.; tekhn. tekst. prom. no. 6:18-21 '63

(MIRA 17:8)

1. Kostromskoy tekhnologicheskoy institut.

TIMOKHOV, Ye.P.; FEYMAN, M.G.

Weatherometer for rapid testing for light and weather fastness.
Lakokras.mat.i ikh prim. no.6:85-86 '62. (MIRA 16:1)
(Paint-Testing)

FEYMAN, Ye. A.

Feyman, Ye. A. - "All-Russian Conference on Directing the Professorships of Biological Sciences, (Pedagogical and teaching institutions, October 1949)," Yevropeyskiy zhurnal, 1949, No. 6, p. 80-84

SO: U-3600, 10 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 6, 1949).

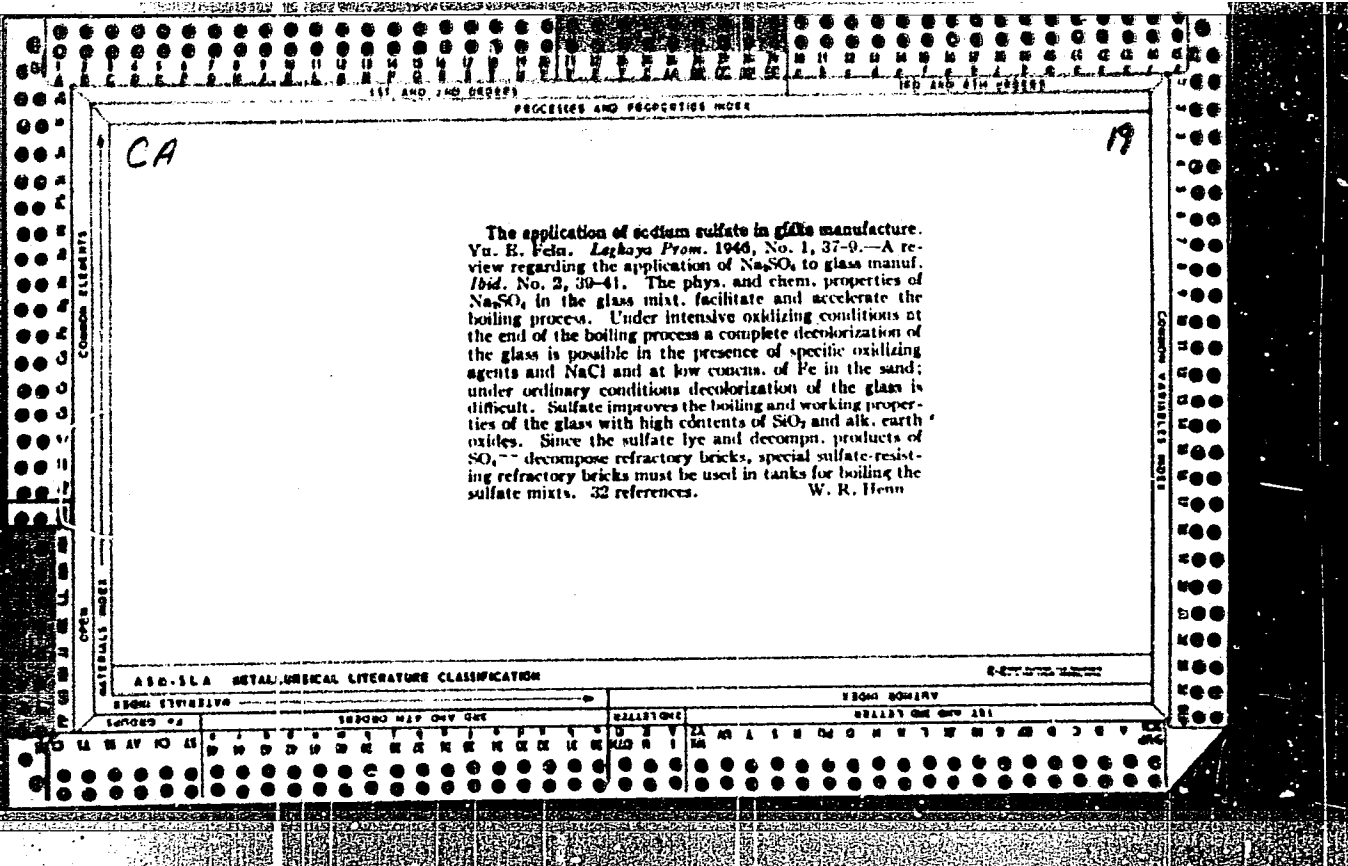
FEYMAN, Ye. A.

"At the Conference of Biology Teachers of Moscow Province," Est. v shkole,
No.4, 1952.

FEYMAN, YE.A.

FEYMAN, Ye.A.

At the republic "Pedagogical lectures." Biol.v shkole no.2:93-95
Mr-Ap '57. (MLRA 10:5)
(Biology--Study and teaching)



PROCESSES AND PROPERTIES INDEX

B

Mechanical Strength of Glass. (In Russian.) L. V. Afans'ev and Yu. E. Fein. *Stekol'naya i Keramicheskaya Promyshlennost'* (Glass and Ceramic Industry), v. 4, Nov. 1947, p. 16-20.

The strength of glass is compared with that of metals. The various factors involved are thoroughly discussed.

A.S.U.S.S.R. METALLURGICAL LITERATURE CLASSIFICATION

REGIONAL INDEX

GENERAL INDEX

COMPARATIVE INDEX

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INDEX OF PAGES

INDEX OF ILLUSTRATIONS

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FEYN, Yu.B.

Raw materials, supplies and the preparation of batches in glass manufacture.
(MIRA 6:11)

Leg.prom. 7 no.8:29-32 Ag '47.

(Glass manufacture)

Fain Yu. E.
V

MECHANICAL STRENGTH OF GLASS, L. V. Afanas'ev and
Yu. E. Fain, Stekol'naya i Keram. Prom., 1947, No. 11,
pp. 16-20; No. 12, pp. 18-22, -- The literature is reviewed
through 1946. No references are cited. B.Z.K.

FEYN, Yu.

"Expansion of cement during hydration ("Zement-Kalk-Gips", 1954,
no.3. p. 92-95)." Reviewed by IU.Fein. TSement 21 no.1:31-32
Ja '55. (MIRA 8:4)
(Gement)

FEYN, Yu.

"A rotary kiln, operating on the wet production method, and fed with argilaceous raw material through a fuel nozzle ("Zement-Kalk-Gips", 1954, no.3, p 75)." E.Shott. Reviewed by IU.Fein. TSement 21 no.1: 32 Ja '55. (MLRA 8:4)
(Cement kilns)

1974, 700
FRYN, Yu., ref.; KOCHANOVA, Ye.B., ref.; DRABKIN, G.S., ref.

From the pages of journals. TSement 21 no.4:29-32 Ag'55.
(Cement industries) (MLRA 8:11)

FEYN, Yu.

Optimum parameters for the design of tank furnaces (From "Journal of
the Canadian Ceramic Society" no.23, 1954). Leg.prom.16 no.2:54-55
F '56. (Glass manufacture) (MLRA 9:7)

FEYN, Yu.

Developing new methods for cooling the molds on machines
manufacturing glass containers. (From "Glastech. Berichte"
no. 9, 1955). Leg. prom. 16 no.7:54-55 J1 '56. (MLRA 9:10)

(Glass manufacture)

FEYN, Yu.

Convection channel annealing furnaces with electric heating.
(From "Ceramic Industries" no. 7, 1955). Leg. prom. 16 no.7:
55 J1 '56. (MLRA 9:10)

(Glass manufacture) (Electric furnaces)

FEYN, Yu., referent.

(Glass manufacture (from "Canadian Ceramic Society", no.23, 1954,
"Szklo i ceramiaka", no.4, 1955, "Silikattechnik", no.2, 1955).
Leg. prom. 17 no.5:56-57 My '57. (MLRA 10:6)
(Glass manufacture)

FEYN, Yu., referent.

Electrochemical engraving of glass (from "Scientific Instruments"
no.6, 1954). Leg.prom. 17 no.6:3 of cover Je '57. (MLRA 10:8)
(Electrochemistry, Industrial)
(Glass cutting)

FHYN, Yu.E., referent.

State of glass container production techniques in the German
Federal Republic (from "Sprechsaal" no.1, 1957). Leg. prom. 17
no.10:52-3 of cover O '57. (MIRA 10:12)
(Germany, West--Glass manufacture)

SOV/131-59-1-10/12

15(2)
AUTHOR:

Feyn, Yu. E., Abstracter

TITLE:

Elasticity and Strength of Refractory Concretes at Different
Temperatures (Uprugost' i prochnost' ognepornykh betonov
pri raznykh temperaturakh)

PERIODICAL:

Ogneupory, 1959, Nr 1, pp 48-48 (USSR)

ABSTRACT:

This is an abstract of an English paper by S. Schneider published
in the Journ. Amer. Ceram. Soc., 1958, Nr 1, pp 27-32.

Card 1/1

15(2)

AUTHOR:

Feyn, Yu. E.

SOV/131-59-2-12/16

TITLE:

Improvement of the Properties of Calcium-Aluminate Cements
(Uluchsheniye svoystv kal'tsiy-alyuminatnykh tsementov)

PERIODICAL:

Ogneupory , 1959, Nr 2, pp 92-92 (USSR)

ABSTRACT:

This is an abstract of an English-language paper published in the Journ. Amer. Ceram. Soc., 1957, Nr 5, pp 158. The abstracter is W. Gitzen.

Card 1/1

FEYN, Yu.E., referent

"Elasticity and strength of refractory concrete at various temperatures"
(from "Journ. Amer. Ceram. Soc." no.1, 1958). Ogneupory 24 no.1:47
'59. (MIRA 12:1)

(United States--Concrete--Testing)

REMPEL', A.M.; SUKHOV, P.V.; KOPEYKIN, A.A., glavnyy red.; ROKHVARGER, Ye. L.,
zamestitel' glavnogo red.; VASYUTINSKAYA, A.A., red.; GARTSMAN, B.M.,
red.; ZAYONTS, R.M., red.; LUNDINA, M.G., red.; NOSOVA, Z.A., red.;
PETROV, N.A., red.; RIVKIN, A.M., red.; ROMANOV, P.R., red.;
SOKOLOV, P.V., red.; FEYN, Yu.E., red.; KOSYAKINA, Z.K., red.;
KASIMOV, D.Ya., tekhn.red.

[Research on clay materials] Issledovanie glinistogo syr'ia. Moskva,
Gosstroizdat, 1963. 119 p. (Kuchino. Gosudarstvennyi nauchno-
issledovatel'skii institut stroitel'noi keramiki. Trudy, no.22).
(MIRA 17:3)

ROGOVSKIY, Leon Vladislavovich, inzh.; FEYNBERG, Grigoriy Mikhaylovich, inzh.
[deceased]; AMTRUSHIN, B.D., inzh., nauchnyy red.; GORDEYEV, P.A.,
red.izd-va; GUSEVA, S.S., tekhn.red.

[Quarries and the processing of rock materials] Kar'ery i obrabotka
kamennykh materialov. Moskva, Gos.izd-vo lit-ry po stroit. i arkhit.
1957. 199 p. (MIRA 11:3)
(Quarries and quarrying)

FEYNBERG, S.M.

Feynberg, S. M. The principle of limiting stress. *Abstract of the Proceedings of the 12th All-Union Conference on Strength of Materials*, 1963, No. 1, p. 12. 1963.

The paper is concerned with applications of the principle of limiting stress to the design of structures. The author states that the principle of the intelligence of the material (the principle of limiting stress) is a generalization of the concept of a state of stress which guarantees the safety of a structure. The author formulates his principle as follows: if a structure is subjected to a set of admissible states of stress, then one of these is actually realized in the structure. (This principle is supposed to hold independently of the manner in which the loads have been brought on to the structure.) With each admissible state of stress, a safety factor is associated. The safety factor is defined as the ratio of the limiting stress to the maximum value of the stresses in the structure. The author is assuming that the limiting stress is a constant. If the limiting stress is accepted, the safety factor is a function of the state of stress. The author defines the safety factor as the ratio of the limiting stress to the maximum value of the stresses in the structure. For all admissible states of stress, the safety factor is a function of the state of stress. For example, the octahedral shearing stress σ_0 is accepted as the yield criterion, the "levelation of a given state of stress from zero" is defined as the maximum value of σ_0 for this state of stress. The state of stress which furnishes the safety factor is then characterized as that admissible state of stress.

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Abstract of Mathematical Reviews, Vol. 12, No. 1

FEYNBERG, S.M.

[Heterogeneous methods for designing reactors. Survey of results and comparison with experiments] Geterogennye metody rascheta reaktorov. Obzor rezul'tatov i sravnenie s eksperimentom. Moskva, 1955. 44 p. (MIRA 12:10)

(Nuclear reactors)

FEYNBERG, S.M.

2

The uranium-water lattice theory. S. M. Feinberg
 Seriya Akad. Nauk S.S.S.R. po Mirnomu Ispol'zovaniyu
 Atomnoi Energii, Zasedaniya Otdel. Fiz.-Mat. Nauk 1955,
 185-214 (English summary, 214-16).—Math. Theoretical
 investigation of the fast fission factor, μ , is based on an
 analysis of the kinetic equation for neutrons. For a homo-
 geneous H₂O-U mixt. μ can be expressed by the approximate
 formula $\mu_{hom} - 1 = (\mu_{235} - 1)(1 - \gamma)$, where μ_{235} (about
 1.2) is the fast multiplication factor in pure U²³⁵ and $\gamma =$
 $V_{H_2O}/(V_{H_2O} + V_U)$ = the vol. concn. of H₂O in the mixt.
 The formula is still valid for a U-H₂O lattice with U slugs
 of less than 1 cm. in diam. μ is higher if the lattice con-
 sists of alternate layers of U plates and H₂O. The exptl.
 results agree satisfactorily with the values derived from
 formulas. For homogeneous mixts. of U and H₂O one can
 obtain also from the kinetic equations (the square L, the
 length of the slow-down τ .)
 Werner Jacobson

NU / RML

PM

AUTHOR: FEYNBERG, S.M.
FEYNBERG, S.M. (Moscow)

TITLE: Plastic Flow of a Flat Shell in the Axial-symmetric Problem
(Plasticheskoye techeniye pologoy obolochki dlya osesimmetrich-
noy zadachi). 40-4-12/24

PERIODICAL: Prikladnaya Mat.i Mekh., 1957, Vol.21, Nr 4, pp.544-549 (USSR)

ABSTRACT: The present paper of the author is a part of his thesis
(Mechanical Institute of the Academy of Sciences of the USSR,
Moscow 1946) on the principle of the limit stress which was
also treated by him in a preceding paper (Prikladnaya Mat.i
Mekh.12, 1, 1948). This principle now is used for the investi-
gation of the plastic flow of a very flat axial-symmetric
shell under uniformly distributed stress and freely resting on
along the periphery. The applied hexagonal approximation gives
the error $\pm 7,5\%$ for the determination of the limit stress.

SUBMITTED: July 15, 1956
AVAILABLE: Library of Congress

CARD 1/1

GELFAND, I. M., FEYNBERG, S. M., FROLOV, A. S. and CHENTSOV, N. N.

"Concerning the Use of the Random Test Method (Monte-Carlo Method) for Solving the Kinetic Equation."

paper to be presented at 2nd UN Intl. Conf. on the Peaceful uses of Atomic Energy, Geneva, 1 - 13 Sept 1958.

FEYNBERG, S.M.

21(4)
 PHASE I BOOK EXPLOITATION. SOV/2583
 International Conference on the Peaceful Uses of Atomic Energy.
 2nd, Geneva, 1958.
 Doklady sovetskikh nauchnykh yadernykh reaktory i yadernykh energiya. (Reports of Soviet Scientists on Nuclear Reactors and Nuclear Power.) Moscow, Atomizdat, 1959. 707 p. (Series: Its: Trudy, vol. 2) Errata slip inserted. 8,000 copies printed.
 General Eds.: N.A. Dollezhal, Corresponding Member, USSR Academy of Sciences, A.K. Kravits, Doctor of Physical and Math. Sciences, L.L. Leppunsky, Member, Ukrainian SSR Academy of Sciences, P.K. Porilyov, Corresponding Member, USSR Academy of Sciences, I.I. Ryzhikov, Doctor of Physical and Mathematical Sciences, I.I. Alyab'ev, Tech. Ed.: Ye. I. Marek.

PURPOSE: This book is intended for scientists and engineers engaged in reactor designing, as well as for professors and students of higher technical schools where reactor design is taught.
 CONTENTS: This lists the second volume of a six-volume collection on the peaceful use of atomic energy. The six volumes contain the reports presented by Soviet scientists at the Second International Conference on the Peaceful Uses of Atomic Energy, held from September 1 to 13, 1958 in Geneva. Volume 2 consists of three parts: the first is devoted to the atomic power plant under construction in the Soviet Union; the second to experiments and research reactors; the third, which is predominantly theoretical, to problems of the nuclear reactor physics and construction engineering. Yu. I. Ryzhikov is the physics and construction engineering. Yu. I. Ryzhikov is the science editor of this volume. See SOV/2081.

PART II. EXPERIMENTAL AND RESEARCH REACTORS
 Leppunsky, L.L., V.D. Gribin, N.N. Arizharov, I.I. Bondarenko, I.I. Ryzhikov, O.I. Kuznetsov, S.A. Pashov, M.P. Mikhal'da, and A.A. Stumov. Experimental Test Reactor in the USSR. (Report No. 2129) 215
 Kiselev, I.K., V.A. Dzhiriyevskiy, I.S. Grigor'ev, Yu.Yu. Glushko, and V.I. Zhurav. Pilot-plant Reactor W/C Uranium Fuel. (Report No. 2130) 215
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Perberg, S.M., Ye. D. Vorob'ev, V.M. Gryzhev, V.R. Klimentov, and V.A. Zaytsev. An Intermediate Reactor for Obtaining High Intensity Neutron Fluxes (Report No. 2142) 319
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PART III. PHYSICS AND ENGINEERING OF REACTOR DESIGN
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REYNBERG, S.M.

21(4) PHASE I BOOK EXPLOITATION SOV/2583
International Conference on the Peaceful Uses of Atomic Energy,
2nd, Geneva, 1958.

Doklady sovetskikh uchenykh: yadernyye reaktory i yadernaya energiya. (Reports of Soviet Scientists: Nuclear Reactors and Nuclear Power.) Moscow, Akademat, 1959. 707 p. (Series: It's True, vol. 2) Errata slip inserted. 8,000 copies printed.
General Eds.: M.A. Dollezhal, Corresponding Member, USSR Academy of Sciences, A.I. Lappunskiy, Krasin, Doctor of Physical and Mathematical Sciences, A.I. Lappunskiy, Krasin, Doctor of Physical and Mathematical Sciences, A.I. Lappunskiy, Krasin, Doctor of Physical and Mathematical Sciences, I. Lyubov, Corresponding Member, USSR Academy of Sciences, I. Lyubov, Doctor of Physical and Mathematical Sciences, and V.S. Al'yab'yev; Tech. Ed.: Ye. I. Mazel.

PURPOSE: This book is intended for scientists and engineers engaged in reactor designing, as well as for professors and students of higher technical schools where reactor design is taught.

COVERAGE: This is the second volume of a six-volume collection on the peaceful use of atomic energy. The six volumes contain the reports presented by Soviet scientists at the 2nd and International Conference on the Peaceful Uses of Atomic Energy held from September 1 to 13, 1958 in Geneva. Volume 2 consists of three parts. The first, devoted to atomic power plants under construction. The first period, the second to experimental and research in the Soviet Union, the third, which is predominantly theoretical, to problems of nuclear reactor physics and the work to improve them; and the fourth, which is devoted to the construction of reactors. The book is the science editor of this volume. See SOV/2081 for titles of the other volumes of the set. References appear at the end of the articles.

Mostovoy, V.I., V.S. Dikarev, M.B. Yezitarov, and Yu. S. Saltykov. Measuring Neutron Spectra in Uranium Water Lattices (Report No. 2152) 546

Yasin, A.K., B.G. Dubovskiy, M.N. Lantsov, Yu.Yu. Glazkov, Ye. I. Inyutin, and A.P. Mchenkov. Studying the Physical Characteristics of a Beryllium-moderator Reactor (Report No. 2146) 555

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Sinyutin, G.V. and V.M. Semenov. Determination of Control Rod Effectiveness in a Cylindrical Reactor (Report No. 2469) 588

Gel'fand, I.N., S.M. Parnberg, A.S. Frolov, and M.M. Chentsov. Using the Monte Carlo Method of Random Sampling for Solving the Kinetic Equation (Report No. 2141) 613

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Kasarnovskiy, M.V., A.V. Stepanov, and P.I. Shapiro. Neutron Thermalization and Diffusion in Heavy Media (Report No. 2143) 634

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Broder, D.L., S.A. Burkin, A.A. Kutuzov, V.V. Levin, and V.V. Orlov. Studying the Spatial and Energy Distribution of Neutrons in Different Media (Report No. 2147) 668

Dmitriev, A.B. Boron Ionization Chambers for Work in Nuclear Reactors (Report No. 2083) 674

Kirillin, V.A. and S.A. Ulybin. Experimental Determination of Specific Volumes of Heavy Water in a Wide Temperature and Pressure Range (Report No. 2471) 690

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24 (6)

AUTHOR:

~~Feinberg, S. M.~~ Feynberg, S. M. (Moscow)

SOV/179-59-4-13/40

TITLE:

The Principle of Maximum Stress

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, 1959, Nr 4, pp 101 - 111 (USSR)

ABSTRACT:

Some ideas and results are put forward which are contained in the author's doctor's dissertation "The Principle of Maximum Stress" (Printsip predel'noy napryazhennosti), Moscow, at the Institut mekhaniki AN SSSR (Institute of Mechanics of the AS USSR), 1946. In 1948, the author only published short excerpts from his dissertation in the paper (Ref 4). A perusal of current publications showed that the author's investigations have kept their value up to date. The author's opinions were greatly influenced by the papers of A. A. Gvozdev (Refs 1, 2) on the application of the boundary equilibrium to statically indeterminate systems, and by the paper of I. Ya. Shtayerman (Ref 3). It is shown here that the limiting break-stress principle can be taken as a starting point for the development of the mathematical theory of elasticity, and that the two classical plasticity theories of Saint-Venant and Genki-Mises can be interpreted as a consequence of this principle. Methods

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The Principle of Maximum Stress

SOV/179-59-4-13/40

of finding a direct solution of the maximum resp. minimum problem in the strength functional are pointed out, namely the method of approximation of the state of limiting stress, e. g. by polynomials with the least deviation from zero, the method of approximation of the given law of strength by the succession of "inscribed" and "circumscribed" boundary conditions, the method of building up the majorant functional of body strength in evaluating the latter "from above", and the combined method.- It is pointed out that the efficiency of these methods was checked by applying them to numerous problems of plastic flow of round and rectangular plates and slightly fiat shells. There are 6 Soviet references.

SUBMITTED: July 23, 1958

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B006/B063 82302

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AUTHORS:

Feynberg, S. M., Konobeyevskiy, S. T., Dollezhal', N. A.,
Yemel'yanov, I. Ya., Tsykanov, V. A., Bulkin, Yu. M.,
Zhirnov, A. D., Filippov, A. G., Shchipakin, O. L.,
Perfil'yev, V. P., Samoylov, A. G., Ageyenko, V. I.

TITLE:

The CM(SM)¹⁹ Research Reactor With a Capacity of 50 Mw

PERIODICAL:

Atomnaya energiya, 1960, Vol. 8, No. 6, pp. 493-504

TEXT: The present article gives a detailed description of the Russian 50-Mw research reactor which has a neutron flux of $2.2 \cdot 10^{15}$ n/cm²sec. It is used both for research work in nuclear physics and reactor engineering; obtaining of new, transuranic elements, testing of fission and building materials under neutron and gamma bombardment, within the temperature range 20°K - 2000°C, and in various media; spectrometric examination of intermediate neutrons; examination of the gamma spectrum of the (n,γ) reaction; examination of short-lived isotopes and neutron diffraction analyses. The authors first discuss some characteristic data.

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The CM(SM) Research Reactor With a
Capacity of 50 Mw

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The water-cooled, reflected reactor works with U²³⁵ enriched to 90%. The critical mass (without the experimental holes) is 7.3 kg of U²³⁵, and including the experimental holes, it amounts to 9.5 kg (loading: ~11.7 kg). The maximum heat flow from the fuel element attains $5.5 \cdot 10^6 \text{kcal/m}^2 \cdot \text{h}$; the surface temperature does not exceed 195°C. Fig. 1 shows the distribution of the neutron flux in the cross section of the reactor; the flux has two maxima, one in the center of the cooling-water cavity ($2.2 \cdot 10^{15}$), and the other in the lateral reflector ($5 \cdot 10^{14} \text{n/cm}^2 \cdot \text{sec}$). The flux/power ratio is $4.4 \cdot 10^{10} \text{n/cm}^2 \cdot \text{sec} \cdot \text{kw}$. With a 25% submersion depth of the fuel elements, the reactor can be in continuous operation for a period of 60-65 days. Several details are dealt with next. Experimental holes: The reactor has five horizontal and fifteen vertical holes. The horizontal ones are in the central part of the active zone, whose longitudinal and cross sections are shown in Figs. 2,3. At the output of the holes the neutron flux amounts to $\sim 3 \cdot 10^{10} \text{n/cm}^2 \cdot \text{sec}$. The vertical holes are located in the reflector with the exception of the central ones. Three of them serve for obtaining transuranic elements (one of these being in the center), two low-temperature holes serve for metal

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The CM(SM) Research Reactor With a
Capacity of 50 Mw

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tests, two high-temperature holes for the testing of fuel elements, chemical analyses of the cooling water, and corrosion tests. All of these holes are water-cooled. Furthermore, five gas-cooled holes serve for testing fission and building materials in the range of 0 - 600°C; one hole (cooled with helium gas or liquid H₂) serves for material tests at low temperatures; one gas-cooled hole for material tests at ~2000°C; one hole cooled with liquid metal (1000°C) for testing fuel elements and coolants. Construction: The following demands were made on construction: creation of a small active zone that would withstand high thermal loads for a long time, and its cooling; application of a maximum number of experimental holes (their distribution is shown in Fig. 3); possible exchange of fuel assemblies without pressure drop. Figs. 2-5 illustrate particulars of the construction. Reactor body and cover: Fig. 2 is described. The cylindrical part is made of 36 mm thick stainless steel of the grade 1X18H9T (1Kh18N9T). The reflector consists basically of beryllium oxide; it is made up of blocks comprising about 65 different types, which are enclosed by steel plates on top and at the bottom. Fuel element assemblies: The element itself has the shape of a plate with a

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The CM(SM) Research Reactor With a
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core, pressed from uranium oxide powder and electrolytic nickel; the core is contained in a nickel can. Fig. 6 shows a section through the assembly, Fig. 7 another through a fuel element. Data of one such element are compiled; every element contains 12.5 g U²³⁵. The cylindrical body shield (Fig. 2) divides the inner reactor cavity into two zones. The functions of this shield are briefly discussed, and the cooling water circulation is described next. The control system is described in greater detail. This system consists of two automatic regulators with two regulation rods each, four shim rods, and four safety rods which can also be used as shim rods. The automatic regulation is operated by 13 ionization chambers located outside the reactor body; it covers the power range from 0.5 to 100%. Several details concerning safety and shim rods are thoroughly discussed. Reactor shield: Fig. 8 shows a cross section through reactor plus shield. The latter consists of steel and heavy concrete. A few details are described, and the process of fuel extraction is briefly dealt with. The cooling system is finally discussed. It consists of four closed, separate loops. The water is kept flowing by circulating pumps (500 t/h, 10 atm); the heat exchange power is 15 Mw.

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The CM(SM) Research Reactor With a
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There are 8 figures and 1 Soviet reference.

SUBMITTED: March 15, 1960

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4

KANAYEV, Andrey Andreyevich; FEYNBERG, S.M., retsenzent; AL'KIMOVICH, A.V., inzh., retsenzent; KUDANOV, N.N., inzh., nauchnyy red.; SMIRNOV, Yu.I., red.; KAMOLOVA, V.M., tekhn. red.; SHISHKOVA, L.M., tekhn. red.

[Atomic power plants] Atomnye energeticheskie ustanovki. Leningrad, Sudpromgiz, 1961. 427 p. (MIRA 15:4)

1. Chlen-korrespondent Akademii nauk SSSR (for Feynberg).
(Atomic power plants)

FEYNBERG, S. M.

PHASE I BOOK EXPLOITATION

SOV/6176

Konobeyevskiy, S. T., Corresponding Member, Academy of Sciences
USSR, Resp. Ed.

Deystviye vadernykh izlucheniv na materialy (The Effect of
Nuclear Radiation on Materials). Moscow, Izd-vo AN SSSR,
1962. 383 p. Errata slip inserted. 4000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye tekhnicheskikh nauk; Otdeleniye fiziko-matematicheskikh nauk.

Resp. Ed.: S. T. Konobeyevskiy; Deputy Resp. Ed.: S. A. Adasinskiy; Editorial Board: P. L. Gruzin, G. V. Kurdyumov, B. M. Levitskiy, V. S. Lyashenko (Deceased), Yu. A. Martynyuk, Yu. I. Pokrovskiy, and N. F. Pravdyuk; Ed. of Publishing House: M. G. Makarenko; Tech. Eds: T. V. Polyakova and I. N. Dorokhina.

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The Effect of Nuclear Radiation (Cont.)

SOV/6176

PURPOSE: This book is intended for personnel concerned with nuclear materials.

COVERAGE: This is a collection of papers presented at the Moscow Conference on the Effect of Nuclear Radiation on Materials, held December 6-10, 1960. The material reflects certain trends in the work being conducted in the Soviet scientific research organization. Some of the papers are devoted to the experimental study of the effect of neutron irradiation on reactor materials (steel, ferrous alloys, molybdenum, avial, graphite, and nichromes). Others deal with the theory of neutron irradiation effects (physico-chemical transformations, relaxation of internal stresses, internal friction) and changes in the structure and properties of various crystals. Special attention is given to the effect of intense γ -radiation on the electrical, magnetic, and optical properties of metals, dielectrics, and semiconductors.

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The Effect of Nuclear Radiation (Cont.)

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TABLE OF CONTENTS:

Konobeyevskiy, S. T. Contemporary Ideas on the Effect of Nuclear Radiations on Solids

5

The article deals with basic characteristics of the effects of irradiation with γ -rays, neutrons, electrons, and heavy charged particles. It is noted that no definite interpretation of the mechanism of neutron-irradiation effects on mechanical properties has yet been established.

Feynberg, S. M. Research Reactor CM. Its Use in Study of Metals and Other Solids

21

A general description is presented of the CM 50,000 kw (thermal) research reactor whose construction is presently [1960] being completed. Experiments in the following areas are expected to be conducted with the reactor in the first series of investigations in solid state physics: 1) effect of the integral value of neutron flux on the mechanical properties of various materials at different temperatures; 2) effect of temperature during irradiation on the diffusion

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4

- 2 -

FEYNBERG, Saveliy Moiseyevich, doktor fiziko-matem. nauk, laureat
Leninskoy premii; KANTER, A.I., red.; NAZAROVA, A.S., tekhn.
red.

[The peaceful atom] Mirnyi atom. Moskva, Izd-vo "Znanie,"
1962. 29 p. (Narodnyi universitet kul'tury. Tekhniko-
ekonomicheskii fakul'tet, no.18) (MIRA 15:2)
(Atomic energy)

FEYNBERG, Saveliy Moiseyavich, doktor fiziko-matem. nauk, laureat
Leninskoy premii; NEKHLYUDOVA, A.S., red.; NAZAROVA, A.S.,
tekh. red.

[The atom and the atomic nucleus] Atom i atomnoe iadro. Mo-
skva, Izd-vo "Znanie," 1962. 30 p. (Narodnyi universitet kul'-
tury: Estestvennonauchnyi fakul'tet, no.23) (MIRA 15:2)
(Atoms) (Nuclei, Atomic)

L 4038-66 EWT(1)/EWT(m)/EPF(c)/ETC/EPF(n)-2/ENG(m)/T/EMP(t)/EMP(b)/EWA(h) RSP(c)
JD/WJ/GS

ACCESSION NR: AT5033781

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AUTHOR: Feynberg, S. M.

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TITLE: The SM research reactor and its use for metal and solid state research

SOURCE: Soveshchaniye po problemie Deystviye yadernykh izlucheni na materialy. Moscow, 1960. Deystviye yadernykh izlucheni na materialy (The effect of nuclear radiation on materials); doklady soveshchaniya. Moscow, Izd-vo AN SSSR, 1962, 21-33

TOPIC TAGS: nuclear research reactor, neutron irradiation, neutron diffraction, water cooled nuclear reactor, solid state research facility, metallurgic research facility

ABSTRACT: After discussing the requirements which should be met by research nuclear reactors, the author shows that a water-moderated reactor with a coolant, operating on intermediate neutrons with a neutron trap, represents an economic solution to two problems simultaneously: production of high intensity thermal and fast neutron fluxes. The ideas discussed were embodied in the design of the SM research reactor having a heat power of 50,000 kw; the construction of this reactor is now very close to completion, and is described in detail together with its operation. In studies of materials and solid state

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physics research, use will be made of gas-cooled channels placed in the zone of the hard neutron spectrum, and also water-cooled channels placed in the reflector. Neutron diffraction studies will be conducted in a horizontal channel. Other channels will permit studies covering the temperature range from liquid helium to 600C and higher. Fourteen topics of research in solid state physics which are planned with the aid of the SM reactor are enumerated. Orig. art. has: 8 figures.

ASSOCIATION: None

SUBMITTED: 18 August 62

ENCL: 00

SUB CODE: NF,SS

NO REF SOV: 000

OTHER: 000

Card 2/2

DP

FEYNBERG, S. M.; TSYKANOV, V. A.; VOROBYEV, Ye. D.

"Reactor SM-2 with the Highest Available Neutron Flux."

report submitted for 2nd Intl Conf, Peaceful Uses of Atomic Energy, Geneva,
31 Aug-9 Sep 64.

FEYNBERG, S. M.; SHEVELEV, Ya. V.

"The pulse reactor potentialities, (for neutrino investigations 1)."

report presented at the 3rd Intl Conf on Peaceful Uses of Atomic Energy, Geneva,
31 Aug-7 Sep 64.

SM-2 (m)/EPF(c)/EPF(n)-2/EPR Pr-4/DA-4 (E)-4 CM

AP5091267

463

Shchegolev, S. M., Dobryzhev, N. A., Yakovlev, V. I., Orlov, V. I., Yakovlev, I. Yu., Gryazev, V. M., Yakovlev, V. S., Yakovlev, Yu. M., Yakovlev, P. I.

Physical and exploitation characteristics of the SM-2 reactor 19

SOURCE: Atomnaya energiya, v. 17, no. 6, 1964, 452-463

TOPIC TAGS: research reactor reactor/SM-2 reactor characteristics nuclear

ABSTRACT: The paper is a summary of the SSSR # 320 report at the International Conference on Peaceful Uses of Atomic Energy in Geneva, 1964. The reactor SM-2 was designed for a wide range of investigations in nuclear physics, solid state physics, metallurgy, radiation chemistry, physics and technology of nuclear reactor construction, and other fields of science and technology. The reactor was described in Atomnaya Energiya 8, 493 (1960). The thermal neutron flux is 2.5×10^{15} n/cm².sec at 50,000 kw. The fast neutron flux with energy larger

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014-2447

ACCESSION NR: AP5001267

that 1 Mev in the active zone exceeds 10^{15} n/cm². sec. Orig. art. has. 9 figures

ASSOCIATION: None

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