

KULIKOV, A.I.; KURLINA, I.P.; POLYAKOV, I.M.; SHIPINOV, N.A.;
ZELENIN, N.I.; FEOFILOV, Ye.Ye.; GARNOVSKAYA, G.N. [deceased];
PARSHINA, Ye.P.

Utilization of shale and coal phenols for the synthesis of
chemicals for plant protection. Khim. i tekhn. gor. slan. i
prod. ikh perer. no.8:152-158 '60. (MIRA 15:2)

1. Vsesoyuznyy institut zashchity rasteniy i Vsesoyuznyy institut
po pererabotke slantsev.

(Phenols)

(Plants, Protection of)

ZELENIN, N.I.; SHALTYKO, G.Ye.; CHERNYSHEVA, K.B.; TATARAKINA, G.V.; FAYNBERG, V. S.; YANKOVSKAYA, T.A.; Prinimali uchastiye: SOKOLOVA, Z.N.; KULESHOVA, A.A.; KRESTENKO, M.N.; BOBROV, V.V.; PIMENCVA, P.G.

Developing methods for the cold fractionation of shale tar. Part 5.
Using light tar as wood impregnating oil. Khim. i tekhn.gor.slav. i
prod. ikh perer. no.12:278-284 '63. (MIRA 17:2)

1. Leningradskiy inzhenerno-ekonomicheskii institut i Leningradskiy institut inzhenerov zheleznodorozhnogo transporta.

ZELENIN, N.I.; KLIMENKO, V.L.

Evaluating the possibilities of separating olefins from chamber
furnace gas. Khim. i tekhn. gor. slan. i prod. ikh perer. no.11:
337-342 '62. (MIRA 17:3)

1. Leningradskiy inzhenerno-ekonomicheskii institut.

ZELENIN, N.I.; FAYNBERG, V.S.

Developing methods for the cold fractionation of shale tar. Part 4:
Effect of the nature of solvents on the yield of fractionation pro-
ducts. Khim. i tekhn.gor.slan. i prod. ikh perer. no.12:264-277 '63.
(MIRA 17:2)

ZELENIN, N.I.; TEREKHOV, S.I.

Prospects for the development of the oil-shale processing
industry and objectives of scientific research in this field.
Trudy VNIIPS no.4:5-17 '55. (MIRA 13:4)
(Oil shales)

ZELENIN, N.I.; SEMENOV, S.S.

Comparative characteristics of producer and tunnel tars obtained
from the semicoking of Baltic oil shales. Trudy VNIIPS no.4:
130-136 '55. (MIRA 13:4)
(Oil shales) (Tar)

ZELENIN, N.I.; SEMENOV, S.S.

Cracking process applied to shale tar and its fractions. Trudy
VNIIPS no.4:161-166 '55. (MIRA 13:4)
(Oil shales) (Cracking process)

IVANOV, B.I.; ZELENIN, N.I.; SHARONOVA, N.F.; KOZAK, Yu.A.

Polymer formation and corrosion of the Kohtla-Järve - Lenin-
grad gas pipeline. Trudy VNIIT no.8:106-112 '59.

(MIRA 13:4)

(Gas, Natural--Pipelines) (Gas pipes--Corrosion)

ZELENIH, N.I.; PEOFILOV, Ye.Ye.

Ways of using shale phenols, Trudy VNIIPS no.6:131-143 '58.

(MIRA 11:8)

(Phenols)

KHARINSKIY, Anatoliy Leonidovich; GIRSHMAN, G.Kh., inzh., retsenzent;
ZELENIN, N.I., inzh., retsenzent; KASATKIN, S.P., inzh., retsenzent;
LEVENBERG, A.Z., inzh., retsenzent; MILYUTIN, V.V., inzh., retsenzent;
VOLGOV, V.A., kand.tekhn.nauk, red.; ZABRODINA, A.A., tekhn.red.

[Fundamentals of the design of radio parts] Osnovy konstruirovaniia
elementov radioapparatury. Moskva, Gos.energ.izd-vo, 1959. 547 p.
(Radio--Equipment and supplies) (MIRA 12:4)

ZELENIN, N.I.

Composition properties, and method of utilization of shale
tar. Trudy VNIIPS no.6;24-38 '58. (MIRA 11:8)
(Tar)

PHASE I OIL EXPLOITATION

veshchiny matematiko-fizicheskimi i inzhinernymi pererabotki i
lapol'sovaniya topliva

Khalya i tekhnologiya topliva i produktov yego pererabotki, vr-8
(Chemistry and Technology of Fuel and Products of Refining, No. 8)
Leningrad, Gosontekhnizdat, 1959. 247 p. (Series: Trudy
Trudy Kravt-ship imeni. 2,500 copies printed.

Sponsoring Agency: N.S.P.S.R. Leningradskiy ekonomicheskii
administrativnyy rayon. Sovet narodnogo khozyaystva.

Ed.: V.M. Erlikh. Kuzn. Ed.: A.A. Chishov; Tech. Ed.: A.S.
Pashchurinskaya; Editorial Board of series: M.S. Barmintseva,
A.Ye. Brudn, D.K. Kollerov, S.S. Semenov, A.S. Shal'skiy,
and A.S. Poteyev.

FORWORD: This collection of articles is intended for scientists,
engineering and technical personnel in plants of the fuel and gas
industry.

COVERAGE: The results of research and experimental work carried out
in 1957 and 1958 by the All-Union Scientific Research Institute
for Shale Processing are summarized in this collection. Organic
components of oil shale from various regions, their chemical compo-
sition, and physical and chemical properties are reviewed, along
with the production of gas and shale oil. Also discussed are:
sealing of oil shale, analysis of oil shale and shale oil. The
treatment of tar obtained in oil shale processing, conversion of
tar and the equipment used, hydrogenation, condensation, and
refining of shale oil, extraction of phenol, and purification of shale
waters by anionite and formaldehyde. Most articles are accompanied
by references. In addition, the book contains an annotated bibliography
of 126 Soviet and non-Soviet works on the processing of oil shales.

Kolman, D.I. Thermophysical and Physicochemical Properties of
Oil Shale from the Baltic Region. (Article 2) Heat Capacity of
Oil Shale and Temperature of Oil Shale Sealing 35

Varnutern, Ye.Y. Testing of Gas Generating Stations of the Oil
Shale Industry in the Town of Olinda 52

Barmintseva, E.S., M.M. Barmintseva, and M.M. Vasil'yeva. Prospects
of Using Oxygen at Plants Producing Gas from Oil Shale 55

Semenov, S.S., and V.I. Zhukov. Condensation and Cooling Systems
for the Vapor and Gas Mixture Produced in the Sealing of Oil
Shale 75

Pavlov, A.Y. Method of Radiant Heat Transfer in Immobile
Piles 82

Orlov, Ye.Y., E.M. I.M. Rubin, and A.Ye. Drabkin. Study of Toxicity
of Light Fractions of Gasoline Produced from Lignite for the Pur-
pose of Combining Fuel Gases 57

Ivanov, B.I., M.L. Zelenin, M.P. Sharonova, and Yu.A. Korak. Per-
sulfation of Polymers and Corrosion of the Koshila-Yarva-Leningrad
Gas Pipeline 106

Zhukov, V.I., and V.L. Klimentov. New Pipe Steels for Conversion of
Hydrocarbon Gases 113

Glushchenko, Ye.Y., and M.O. Prava. Hydrogenation of Diesel Fuel
Produced from Oil Shale 133

Gulyayeva, I.I., and S.S. Meznerova. Composition of Chemical Groups
and Volatiles of Neutral Oxygen Compounds Contained in
Shale Tar Produced by Sealing 142

Pobyl'skaya, M.V. Pyrolysis of the Fraction Contained in Shale
Tar from the Furnace Chamber with a Boiling Point up to 180°C 154

Lapin, V.M., and S.S. Meznerova. Ways of Increasing Production of
Sulfate-Active Compounds of Oil Shale Tar 176

Kobyl'skaya, M.V. Composition of Pyridine Bases of Oil Shale Tar
from the Furnace Chamber 198

Ivanov, B.I., and Yu.A. Korak. Countercurrent Extraction of Phenol
from Tarry Waters Produced with Butylacetate and the Problem of
Mass Transfer 203

Ivanov, B.I., M.P. Sharonova, and Z.P. Shal'skiy. Purification
with Anionite of Oil Shale Tarry Waters 213

Ivanov, B.I., and K.A. Galutskiy. Purification of Phenol Waters
Produced During the Thermal Conversion of Oil Shale by Means of
Condensation with Formaldehyde 222

Shal'skiy, A.S. Bibliography with Annotations Relating to Processing
of Oil Shale 222

ZELENIN, N.I.

Basic principles and methods of processing shale tar.
Khim. i tekhn. gor. slan. i prod. ikh perer. no. 8:5-12 '60.

(MIRA 15:2)

(Oil shales)

(Tar)

ZELENIN, N.I.; CHERNYSHEVA, K.B.; ANTIROPYANSKAYA, Ye.A.; PYSHKINA, N.I.

Developing methods of cold fractionation of shale tar.
Report No.1. Khim. i tekhn. gor. slan. i prod. ikh perer.
no.8:195-209 '60. (MIRA 15:2)

(Distillation, Fractional)
(Oil shales)

MOROZOV, Georgiy Andreyevich; ZELENIN, N.I., nauchnyy red.; DAYEV, G.A., ved. red.; SAFRONOVA, I.M., tekhn. red.

[Using diesel oils with additives] Primenenie dizel'nykh zasol s prisadkami. Leningrad, Gostoptekhnizdat, 1962. 112 p.

(MIRA 15:7)

(Diesel engines---Lubrication)

S/583/62/000/010/002/002
I001/I210

AUTHORS: Zabrodkin, A. G., Zelenin, N. I., Vasiliev, M. L., Feofilov, E. E. and Lieva, V. Yu.

TITLE: Industrial tests of synthetic adhesives based on phenols of shale resin, boiling at a temperature higher than 300°C, and admixed with tricresol

SOURCE: Estonian SSR. Institut slantsev. Khimiya i tekhnologiya goryuchikh slantsev i produktov ikh pererabotki, no. 10, Leningrad, 1962, 235-256

TEXT: This is a continuation of previous works (Zelenin, N. I., Vasiliev, M. L., Feofilov, E. E., Khimia i tekhnologiya goryuchikh slantsev i produktovikh pererabotki, no. 9, 1960, 204; Zabrodkin, A. G., Lieva, V. Yu., Vasiliev, M. L., ibidem 236). The adhesive resin prepared in the laboratory was tested in the Ust'-Izhorsk plywood factory and the results showed that the resin with admixture of tricresol, and ethyl alcohol as a solvent could be used in the production of bakelized plywood. There are 4 tables and 1 figure.

ASSOCIATION: Soviet narodnogs khazyaystva ESSR repravlenie slantsevoy i khimicheskay promishlevnosti: Nauchno-issledovatel'skiy institut po dubychei pererabotke slantsev "Institut slantsev" (Soviet of National Economy of Estonian SSR, Administration of Shale and Chemical Industry. Scientific Research Institute for Extraction and Processing of Shales—"Shale Institute")

Card 1/1

S/583/62/000/010/001/002
1001/1210

AUTHOR: Zabrodkin, A. G., Zelenin, N. I., Lieva, V. Yu., Feofilov, E. E. and Vasiliev, M. L.
TITLE: Industrial tests of synthetic adhesives based on shale-phenols boiling up to 300°C
SOURCE: Estonian SSR. Institut slantsev. Khimiya i tekhnologiya goryuchikh slantsev i produktov ikh pererabotki, no. 10, Leningrad, 1962, 246-252

TEXT: The development of the plywood industry required by the 7-year Plan needs new and cheaper adhesives. TsNIIFM developed a new method for the preparation and condensation of a water-soluble resin from shale-phenols with addition of tricresol. The resin was controlled under industrial conditions at the Ust'-Izharsk plywood factory. The finished product responded to the standard requirements ГОСТ-3916-55 (GOST-3916-55). Phenols were obtained in 1960 at the pilot plant of the shale works im-Lenina. The use of this resin economizes 50% of tricresol compared with the resin ЦНИИФМ-С-35 (TsNIIFM-S-35) and it can be introduced into ФСФ (FSF) brand plywood. There are 5 tables and 1 figure.

ASSOCIATION: Soviet narodnogs khazyaystva ESSR repravlenie slantsevoy i khimicheskay promishlevnosti: Nauchno-issledovatel'skiy institut po dubychei pererabotke slantsev "Institut slantsev" (Soviet of National Economy of Estonian SSR, Administration of Shale and Chemical Industry. Scientific Research Institute for Extraction and Processing of Shales — "Shale Institute")

Cnrd 1/1

ZELENIN, Yevgeniy Vladimirovich; KOTOV, I.I., retsenzent; SOLODKOV,
V.A., red.; MURASHOVA, N.Ya., tekhn.red.

[Course in descriptive geometry with problems and exercises]

Kurs nachertatel'noi geometrii s zadachami i uprashneniyami.

Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1959. 386 p.

(MIRA 13:2)

(Geometry, Descriptive)

ZBLANNIN, N.I.; CHERNYSHEVA, K.B.

Studying the primary thermal conversion processes of basic
constituents of medium shale-tar fractions, Trudy VNIIPS no.6:
144-162 '58. (MIRA 11:8)
(Oil shales)

ZELENIN, N.I.; TATARKINA, G.V.; SHIROKOVA, N.Ye.; NEMIROVSKIY, A.N.;
PEOFILOV, Ye.Ye.; OL'SHEVSKAYA, K.Ya.

Production of automobile gasoline. Khim. i tekhn. gor. slan.
i prod. ikh perer. no.8:75-83 '60. (MIRA 15:2)
(Gasoline)

ZELENIN, N.I.; PREYS, M.O.; FEOFILOV, Ye.Ye.; CHERNYSHEVA, K.B.;
YEFIMOV, V.A.; TSIPEROVICH, M.V.; YEVTUSHENKO, V.Ya.

Using methanol extract from the middle cut of shale tar in
the flotation of coal. Khim. i tekhn. gor. alan. i prod.
ikh perer. no.8:102-116 '60. (MIRA 15:2)

(Methanol)

(Coal)

(Flotation)

ZELENIN, N.I.; CHERNYSHEVA, K.B.; SMIRNOV, V.I.; ANTROPYANSKAYA, Ye.A.

Developing methods of cold fractionation of shale tar. Report
No.2. Investigation of heavy oil. Khim. i tekhn. gor. slan. i
prod. ikh perer. no.9:172-183 '60. (MIRA 15:6)
(Distillation, Fractional) (Oil shales)

ZELININ, N.I.; CHERNYSHEVA, K.B.; PYSHKINA, N.I.; ANTROPYANSKAYA, Ye.A.

Developing methods of cold fractionation of shale tar. Report
No.3. Separation of phenols from light oil. Khim. i tekhn. gor.
slan. i prod. ikh perer. no.9:184-193 '60. (MIRA 15:6)
(Distillation, Fractional) (Oil shales) (Phenols)

ZELENIN, N.I.; VASIL'YEV, M.L.; FEOFILOV, Ye.Ye.

Methods for utilizing high-boiling fractions of shale phenols.

Khim. i tekhn. gor. slan. i prod. ikh perer. no.9:199-203 '60.

(MIRA 15:6)

(Phenols) (Oil shales)

ZELENNIN, N.I.; VASIL'YEV, M.L.; FEOFILOV, Ye.Ye.

Use of high-boiling shale phenols for the production of plastic materials; thermosetting and activity of shale phenols. Khim. i tekhn. gor. slan. i prod. ikh perer. no.9:204-213 '60. (MIRA 15:6)

(Plastics) (Oil shales) (Phenols)

ZELLENIN, N.I.

USSR/Chemical Technology - Chemical Products and Their
Application. Treatment of Solid Mineral Fuels

I-7

Abs Jour : Ref Zaur - Khimiya, No 1, 1958, 2475

Author : Zelenin, N.I., Kuz'mina, N.A.

Inst : All-Union Scientific Research Institute of Shale Processing.

Title : Behavior of Acetaldehyde Over Some Catalysts at Temperatures of Low-Temperature Carbonization.

Orig Pub : Tr. Vses. n.-i. in-ta po perarabotke slantsev, 1956, No 5, 225-236

Abstract : To elucidate the mechanism of thermal decomposition of the organic portion of shale a study was made of the conversion of acetaldehyde over Cambrian blue clay, aluminosilicate catalyst and shale ash, at 50-450° and a rate of feed of the raw material, of 0.5 liter per hour per 1 volume of catalyst.

Card 1/1

ZELLENIN, N. I.

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Solid Mineral Fuels, 1-12

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62503

Author: Zelenin, N. I., Terekhov, S. L.

Institution: None

Title: On Prospective Development of Shale Processing Industry and the Problems of Scientific Research in This Field

Original
Periodical: Tr. Vses. n.-i. in-ta po pererabotke slantsev, 1955, No 4, 5-17

Abstract: Brief consideration of the most important trends in research and experimental work ensuing from the present state and development course of shale processing industry taking into account the specific features of this development in USSR.

Card 1/1

Z E L E N I N , N I .

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of
Solid Mineral Fuels, I-12

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62541

Author: Zelenin, N. I., Semenov, S. S.

Institution: None

Title: Concerning the Cracking of Shale Tar and Its Fractions

Original

Periodical: Tr. Vses. n.-i. in-ta po pererabotke slantsev, 1955, No 4, 161-166

Abstract: It is noted that residues obtained on fractionation of the tar of
Baltic region shale, which amount to 50-60% are rich not in hydro-
carbons but in oxygen-containing compounds. Analysis of numerous
cracking data shows that maximum yields of products on the basis of
the tar amount to ~25% hydrocarbons, 30-35% coke and 30-35% gas.
These data and also those relating to mechanism and chemism of
thermal and catalytic cracking indicate the inappropriateness of the
use of cracking, in this instance, as a means of increasing yields
of light fractions.

Card 1/1

ZELEENIN, N.I.; KUZ'MINA, N.A.

Behavior of acetaldehyde in the presence of certain catalysts at
semicoking temperatures. Trudy VNIIPS no.5:225-236 '56.

(MLRA 10:5)

(Acetaldehyde)

ZELENIN, N.I.; CHERNYSHEVA, K.B.

Study of primary thermal conversion processes of basic components
of medium fractions of shale (ar. Trudy VNIIPS no.5:237-252 '56.
(MLRA 10:5)

(Tar) (Oil shales)

ZELENIN, N. I.

U.S.S.R.

Chemistry

"Liquid Fuel From Bituminous Shale", Gostoptekhnizdat, 1948

~~See~~ Summary No. 60, 26 May 52; BR-52056899

ZELENIN N. L.

AND Kosheleva N.N. Kreking Slantsevykh Smol Skhloristym Alyuminiyem,

Goryuchiye Slantsy, 1934, No. 3,35.

SO: Goryuchiye Slantey #1934-35 TN. 871 G74

PROTASOV, P.V., kand.sel'skokhozyaystvennykh nauk; ZELENIN, N.N.; kand.-
sel'skokhozyaystvennykh nauk; PERSHIN, G.P., kand.sel'skokho-
zyaystvennykh nauk

Waste and qualith deterioration of mineral fertilizers due to poor
storage management. Zemledelie 24 no.6:51-54 Je '62.

(MIRA 15:11)

(Fertilizers and manures--Storage)

ZELEININ, N.N.

Results of testing complex fertilizers SUM-I and SUM-II on the
cotton plant. Uzb. khim. zhur. no.1:11-14 '61. (MIRA 14:1)
(Fertilizers and manures)

ZELENIN, N.N.

Effectiveness of ammoniated superphosphate from Kara Tau phosphorites on cotton growth. Uzb. khim. zhur. no.3:29-35 '58. (MIRA 11:9)

1. Tsentral'naya stantsiya udobreniya i agropochvovedeniya Vsesoyuznogo nauchno-issledovatel'skogo instituta khlopkovodstva Akademii sel'skokhozyaystvennykh nauk USSR.

(Kara Tau--Phosphorites) (Phosphates) (Cotton growing)

ZELININ, R.P. (Moskva, Ye-370, ul. Eoytsova, d.6, korp.4, kv.19)

Postthrombophlebitic syndrome of the lower extremities.

Vestn. khir. Grekov. 90 no.4:39-42 Ap'63 (MIRA 17:2)

1. Iz 1-y khirurgicheskoy kliniki (zav. - doktor med. nauk N.I. Makhov) i rentgenologicheskogo otdela (zav. - doktor med. nauk V.I. Petrov) Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta imeni M.F. Vladimirovskogo.

ZELENIN, V.F., prof.

Prevention of hypertension. Zdorov'e 4 no.10:11-13 0 '58
(MIRA 11:11)

1. Deystvitel'nyy chlen AMN SSSR.
(HYPERTENSION)

ZELENA, N.N.

USSR/Cultivated Plants - Technical, Oleaginous, Sugar-Bearing.

L-5

Abs Jour : REF Zhur - Biologiya, No 16, 25 Aug 1957, 69286

Author : Zelenin, N.N.

Inst :

Title : Effectiveness of Ammoniated Superphosphates from Kara-Tau Phosphorites on Cotton Plants.

Orig Pub : Sots. s. kh. Uzbekistana, 1956, No 3, 73-75

Abst : Field experiments were conducted in 1954-1955 by the Central station of fertilizers and soil science Union-NIKhI in the Yangiyul rayon on typical gray soil. A granulated and ammoniated superphosphate from Kara-Tau phosphorite in particles up to 4 mm in a dose of P₆₀ was added in plowing after turning layers of alfalfa and the old plowland on a background of N₁₁₀. In 1955 the additional yield of raw cotton on turned layers amounted to (by comparison with a nitrogen background): with ammoniated superphosphate of particles up to 2 mm--

Card 1/2

USSR/Cultivated Plants - Technical, Oleaginous, Sugar-Bearing.

L-5

Abs Jour : R^Ef Zhur - Biologiya, No 16, 25 Aug 1957, 69286

5.8; of particles up to 4 mm-- 4.7; with ordinary superphosphates-- 2.6 centners/hectare. On old cotton plowland in 1954 these additional yields were obtained: with ammoniated superphosphates up to 4 mm-- 1.9 and with ordinary superphosphate-- 1.6 centners/hectare. The advantage of ammoniated superphosphate was demonstrated also in its use during the vegetative period.

Card 2/2

ZELENIN, N. N. Cand Agri Sci --(diss) Effectiveness of phosphorus fertilizer forms of Karatau phosphorites on Cotton plants," Tashkent, 1960, 20 pp, 200 copies,
(Scientific Institute of Fertilizers and Insectofungicides im Prof. Ya. I. Samoylov) ("NIUIF") (KL, 48/60, 115)

ZELENIN, N. V.

Zelenin, N. V. "Criteria of the effectiveness of psychiatric hospitalization and forms of its follow-up," Ogr.-metod. voprosy sovr. neyropsikiatrii (VII), 1948, p. 118-34

SO: U-3264, 10 April 53, (Letopis 'Zhurnal 'nykh Statey, No. 4, 1949).

ZELENIN, R.P.; BLYAU, O.R.

Congenital absence of the deep veins of the lower extremity in
angiomatosis. Khirurgiia 39 no.12:84-87 D '63 (MIRA 18:1)

1. Iz khirurgicheskoy kliniki (zav. - prof. N.I. Makhov) Mos-
kovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo
instituta imeni M.F. Vladimirovskogo i kafedry detskoy khirur-
gii (zav. - prof. S. Ya. Doletskiy) Tsentral'nogo instituta
usovershenstvovaniya vrachev na baze Detskoy klinicheskoy
bol'nitsy No.2 imeni I.V. Rusakova (glavnyy vrach M.M. Kraseva),
Moskva.

MOZZHUKHIN, D.D.; KHIDEKEL', M.L.; ALEKSANDROVA, Ye.N.; ZELENIN, S.N.;
BEREZOVSKIY, V.M.

Flavine catalysis of hydrogen transport from dihydroxyridines
and similar compounds. Izv. AN SSSR. Ser. khim. no.9:1692-
1694 '65. (MIRA 18:9)

1. Institut khimicheskoy fiziki AN SSSR.

13

CR

Cementing of pressboards with natural and synthetic rubber. S. I. Zelenin. *Bumashnoye Prom.* 10, No. 12, 17-24 (1938). Several procedures for the production of pressboards from leather scrap and waste cellulosic materials with the use of latex and synthetic rubber as the binding agents are described. In the production of shoe soles a more durable board is obtained with coned latex by addn. of casein as a protective colloid and Na_2S , and vulcanization. Because of the resistance to oxidation, chloroprene proved to be a more suitable binder for boards used in the fabrication of certain machine parts, such as brake and friction disks. The use of butadiene rubber as a binder produced inferior results. The comparative phys. and mech. properties of pressboards of various compns. are tabulated and discussed.

Chas. Blanc

SHIRIN, P.K., kand.tekhn.nauk; SKOPIN, G.A., nauchnyy sotrudnik; Prinimali uchastiye: ANTONOV, V.I., inzh.; ZELININ, S.S., inzh.; BOGUSHEVICH, Ye.N., inzh.; KLIMOVA, G.D., red.izd-va; GOL'BERG, T.M., tekhn.red.

[Norms RN-1-60 for drawing-up plans for the organization of construction] Raschetnye normativy dlia sostavleniia 'proektov organizatsii stroitel'stva RN-1-60. Moskva, Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.materialam, 1960. 98 p.

(MIRA 13:12)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.
 2. Rukovoditel' Sektora organizatsii promyshlennogo stroitel'stva i tekhnologii proizvodstva rabot Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu (for Shirin).
 3. Otdel ekonomiki i organizatsii stroitel'stva Gosstroya SSSR (for Antonov, Zelinin, Bogushevich).
- (Construction industry)

1. ZELENNIN, V.
2. USSR (602)
4. Colorado River
7. Fate of Boulder Dam, Vokrug sveta, no. 11, 1952.

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

GORYACHEV, A.P. (Leningrad); ZELENIN, V.A. (Leningrad)

Mechanized welding with a nonconsumable electrode by a
penetrating arc. Avtom. avar. 17 no.12:24-29 D '64

(NIRA 18:2)

"APPROVED FOR RELEASE: 03/15/2001

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CIA-RDP86-00513R001964220019-7"

Card 2/2

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(HEART)

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[Diseases of the cardiovascular system] Bolezni serdechno-sosudistoy
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red.; ZELENIY, V.F., red.; KRASNOV, M.L., red.; KRISTMAN, V.I.,
red.; MAYSTRAKH, K.V., red.; MALINOVSKIY, M.S., red.; MASHKOVSKIY,
M.D., red.; MUL'TANOVSKIY, M.P., red.; SNEZHNEVSKIY, A.V., red.;
SOLOV'YEV, V.D., red.; CHERKINSKIY, S.N., red.; KON, M.A., starshiy
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 N.N., prof.; FOGEL'SON, L.I., prof.; KHVILIVITSKAYA, M.I., prof.;
 LUKOMSKIY, P.Ye., prof., red. toma; MYASNIKOV, A.L., prof., otv.
 red.; TAREYEV, Ye.M., prof., zam. otv. red.; BAGDASAROV, A.A.,
 prof.[deceased], red.; BARANOV, V.G., prof., red.; VOVSI, M.S.,
 prof., red.[deceased]; IVANOV, V.N., prof., red.[deceased];
 KURSHAKOV, N.A., prof., red.; MOLCHANOV, N.S., prof., red.;
 NESTEROV, A.N., prof., red.; SPERANSKIY, I.I., prof., red.
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 LYUDKOVSKAYA, Yu.S., tekhn. red.; BEL'CHIKOVA, Yu.S., tekhn.red.

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(Continued on next card)

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L.S., red.

[How to strengthen the heart] Kak ukrepit' serdtse. Izd.4.
Moskva, Meditsina. 1964. 132 p. (MIRA 17:11)

1. Deystvitel'nyy chlen AMN SSSR (for Zelenin).

LOZHKIN, A.N., doktor tekhn.nauk, prof.; ZELENIN, V.M., kand.tekhn.nauk

Using nonjustable steam extraction in small and medium-sized
turbines for district heating purposes. Energomashino stroenie
6 no.5:14-17 My '60. (MIRA 13:9)
(Steam turbines) (Heating from central stations)

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E194/E3.5

26.2120

AUTHORS: Kasparov, M.A., Candidate of Technical Sciences
(Deceased), Zelenin, V.M., Candidate of Technical
Sciences and Venediktov, V.N., Engineer

TITLE: Computer Investigation of Temperature Distribution
and Temperature Stresses in Turbine Rotors

PERIODICAL: Energomashinostroyeniye, 1961, No. 1, pp. 1-5

TEXT: In determining their temperature distribution and
temperature stresses, steam- and gas-turbine rotors of simple
shape are sometimes considered as hollow cylinders of
infinite length. The temperature distribution is then found
by solving the unidimensional equation of transient thermal
conductivity represented in cylindrical coordinates and
written as Eq. (1). In solving Eq. (1), the initial
conditions are the temperature distribution in the body at
the initial time. In the problem under consideration
the initial temperature is taken to be the same at all parts
of the rotor. The boundary conditions depend on the
temperature of the surrounding medium and on the heat-transfer
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Computer Investigations of Temperature Distribution and
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coefficient between the medium and the surface of the cylinder. It is assumed that the temperature of the surrounding medium rises instantaneously from its initial to its final value at zero time. With these boundary conditions the temperature at the surface of the cylinder is found from Eq. (2). In order to make Eq. (1) more universal, the problem should be solved in dimensionless coordinates and criteria of similarity. These are given as: relative temperature ratio of internal to external radius of the cylinder; Fourier's criterion, F_0 ; and

Bio's criterion. Expression (1) is then obtained in the form of Expression (4). Solution of the Fourier equation in criterial form makes it possible to extend it to hollow cylinders of various sizes with various temperatures of media and body.

In order to solve the problem on a computer, Eqs. (3) and
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Computer Investigations of Temperature Distribution and
Temperature Stresses in Turbine Rotors

(4) must be written in finite differences. The method of doing this is explained and expression (14) is derived for the inner surface and expression (15) for the outer surface. These formulae were used to calculate the temperature stresses on a "Strela" computer. The temperature distributions and temperature stresses were calculated for the conditions of design and operation of stationary turbines. With the conditions chosen it is stated that the error in calculating the integral in Formulae (14) and (15) by the trapezium method gives an error of less than $\pm 10\%$. An error of this order in determining temperature stresses is quite acceptable in engineering practice. X

The results of the computer calculations were used to construct nomograms of change of relative temperature on the internal and external surfaces of the cylinder. It has also been shown that the nomograms can easily be used to determine

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Computer Investigations of Temperature Distribution and
Temperature Stresses in Turbine Rotors

temperature stresses in the rotor when the temperature of the medium that heats the rotor varies according to a linear law along the length of the rotor. As this case is often met in practice, the nomograms for the study of temperature distributions and temperature stresses in turbine rotors can be widely employed. A numerical example of use of the nomogram to determine the temperature and stress is then given. In order to check temperature stresses in designing turbines and selecting starting conditions for power installations it is necessary to have a convenient method of determining the maximum temperature stresses in the turbine rotors. The computer calculations were used to construct combined nomograms to determine the maximum values of temperature stress in rotors of simple cylindrical shape.

By means of the nomograms which are given in Fig. 2, various kinds of problem may be solved. For example, under turbine

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Computer Investigation of Temperature Distribution and
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operating conditions, given the dimensions of the rotor and the heat-transfer coefficient at its surface, the magnitude and time of occurrence of the maximum temperature stresses can be calculated. The method of doing this is briefly explained. The nomograms can also be used simply and quickly to solve the inverse problem of assessing the heat-transfer coefficient on the rotor surface from known values of temperature stress, rotor size and heating conditions and also to solve a number of other problems. X

Calculation with these nomograms is much simpler than analytical calculations. When using the nomograms to calculate temperature stresses in rotors of more complicated meridional section, use should be made of experimental correction factors or individual solution programmes should be drawn up for each particular problem on a computer. There are 2 figures and 5 Soviet references.

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20166

S/114/61/000/004/001/006
E194/E435

26.2120

AUTHORS: Zelenin, V.M., Candidate of Technical Sciences and
Krotova, N.V., Engineer

TITLE: The Application of Electronic Computers to
Calculation of the Natural Frequencies of Turbine Discs

PERIODICAL: Energomashinostroyeniye, 1961, No.4, pp.5-7

TEXT: Calculation of the natural frequencies of turbine discs is a laborious process in turbine design. The object of the present work was to examine and compare existing methods of calculating the vibration of turbine discs and to assess the possibilities of obtaining solutions with analogue or digital computers, to select the method of calculation most convenient for mechanization and to determine the computer time required. Two methods of calculation were selected, namely a method of successive approximations and a method of A.V. Levin. Both are based on the energy balance equation

$$\Phi_{\text{potent}}^{\text{max}} = \Phi_{\text{kinet}}^{\text{max}} = p^2 \Phi_{\text{kinet}}^{\text{max}}$$

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whence the square of the natural frequency of the bladed disc

$$p^2 = \frac{\Phi_{\text{potent}}^{\text{max}}}{\Phi_{\text{kinet}}^{\text{max}}}$$

The maximum values of potential and kinetic energy of the vibrating system Φ are functions of the shape of bending of the mean plane of the disc which may be represented in the form

$$W(r, \varphi) = X(r) \cos m\varphi$$

where $X(r)$ is a function of the radius; r, φ are polar coordinates and m is the number of node diameters. Thus determination of the natural frequencies of the disc consists in determining the function $X(r)$. For this purpose it suffices to replace the shape of bending of the disc during oscillation by the shape of static bending due to a uniform load over the radius. Use of an analogue computer is first considered and equations are

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written down for static bending of the disc and of a blade.
The disc chosen for consideration is illustrated in Fig.1 for which
the equation of static bending is a linear non-uniform fourth order
differential equation with variable coefficients.

$$x^{IV} + \frac{A_3(r)}{A_4(r)} x''' + \frac{A_1(r)}{A_4(r)} x'' + \frac{A_2(r)}{A_4(r)} x' + \frac{A_0(r)}{A_4(r)} x = \frac{\text{const}}{A_4(r)} \quad (3)$$

One special feature of this problem is the presence of a
differential equation with boundary conditions. Of the four
boundary conditions two are given at one end of the interval of
integration and two at the other. The boundary conditions may be
satisfied by obtaining numerous solutions for various combinations
of initial values of the two variables. It is shown that the
problem consists in determining three functions with known initial
conditions and two constants from the boundary conditions at the
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far end of the range of integration. In order to make the search for a solution of the boundary conditions fully automatic, a special unit was developed, to complement the analogue computer, which consisted of blocks of variable coefficients and groups of relays. A necessary and sufficient condition for automatic search for a solution with this unit is that the function shall be monotonous; this condition is fulfilled in the case considered. A second feature of the problem is that two equations are solved simultaneously: that of static bending of the disc and that of bending of the blade. The solution is required to determine the maximum values of kinetic and potential energy of bending of the oscillating bladed disc, from the ratio of which the natural frequencies of oscillation may be determined. Since the maximum values of potential and kinetic energies are functions of maximum bendings of the disc and blade an important condition of modelling is a selection of scales such that the time required to solve the two equations should be the same. Then if solution of the two equations is commenced simultaneously, their solutions are obtained together at the end of the interval of integration. An analogue computer type MH-8 (MN-8) was used to obtain solutions for nine
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variants of conical disc shape. The initial variant was a particular profile of turbine disc and the other eight were obtained by changing one or another of its geometrical characteristics such as thickness, or angle of conicity. For the initial disc the analogue computer gave a frequency of 375 c/s and the value obtained on a "Ural" digital computer was 361 c/s. The agreement is very good. The divergence is attributed to the lower accuracy of the analogue computer, to different methods of fixing the blades in the bundles and to the fact that vibration of the hub was allowed for in the digital but not the analogue computer. The total solution time including search for unknown initial conditions was about 50 seconds. A considerably greater time was required in preparing the problem for solution on the machine, in calculating the machine coefficients and so on. It is also very inconvenient that the coefficients in Eq.(3) depend on the disc geometry so that they need to be recalculated on changing over from one variant to another. Thus, a fairly complicated mathematical problem was solved sufficiently accurately but considerable preparatory work was required. To obtain a solution on a digital computer the

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method of A.V. Levin was used (Ref.1), according to which the static bending of the disc is given by

$$X(r) = ar^s \quad (6)$$

where s is an unknown variable parameter. The true value of s is determined from the condition of minimum of the function $p^2(s)$ which is of the form

$$p^2(s) = \frac{q}{\gamma} \cdot \frac{2A_1A_2}{A_1B_2 + A_2B_1 + \sqrt{(A_1B_2 - A_2B_1)^2 + 4A_1B_2B_3^2}} \quad (7)$$

where A_1, A_2, B_1, B_2, B_3 are functions of the parameter s and the blade and disc geometry. This procedure was used to programme the calculation of vibration of bladed discs with a body consisting of various sections of cylindrical or conical profiles. The programme contains two zones (III and IV). The zone III contained the initial data (159 elements), constants and a programme of calculation of magnitudes which do not depend on the Card 6/10

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parameter such as moment of inertia, and the programme of blade calculation. Zone IV includes the main programme of calculation

$$f_{st}(s) = \frac{p(s)}{2\pi}$$

Variation of s over a wide range was considered so as to analyse the function $f_{st}(s)$ in order to obtain information about the limits of variation of s in practical calculations. Calculations were made on three discs: one of constant thickness, another with a body of conical profile and a third with a body of two sections, the inner conical and the outer of constant thickness (Fig.2). The results plotted for different values of m , the number of node diameters, show that the curves of $f_{st}(s)$ have not more than two minima or inflection points. It was found that the shape of the disc body has a considerable influence on the shape of these curves and for a conical disc the influence of the hub is not so great as for a disc of constant thickness. In order to study the formation of these inflection points on the curve, for one of the discs values were plotted proportional to the potential

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energies of the hub, the disc body and the rim and it was found that the shapes of the potential energy curves of the hub and body have the most influence. The point is illustrated in Fig.3 which shows the formation of minima on the curves of s for a flat-conical disc where curve (1) corresponds to oscillation of the body and curve (2) to the hub. The formation of two inflection points, by super-position of the curves, is clearly seen. Certain procedures are recommended for simplifying the calculations. It is concluded that if a universal programme is available for the digital computer "Ural", it is best to calculate the natural frequencies on the digital computer. The use of an analogue computer is both less accurate and requires more preparatory work for calculation of each fresh variant. Using A.V.Levin's method of calculation requires 4 to 5 working days of manual labour while the "Ural" computer can do the work in 30 to 60 minutes. With manual calculation the minimum on the curve is determined from 3 to 4 points and on the computer from 20 to 25 points. There are 3 figures and 2 Soviet references.

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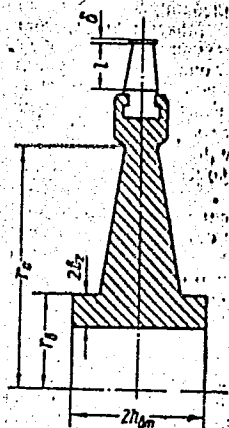


Fig. 1.

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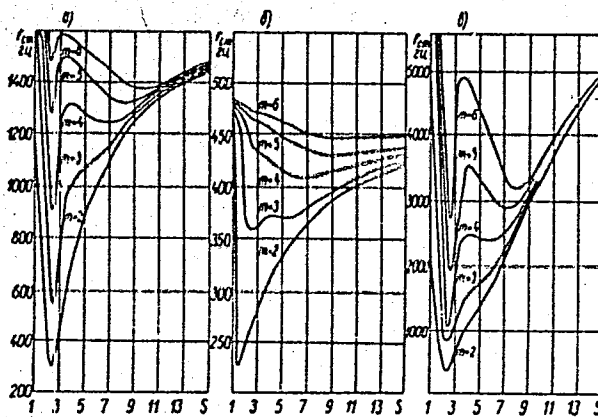


Fig. 2.

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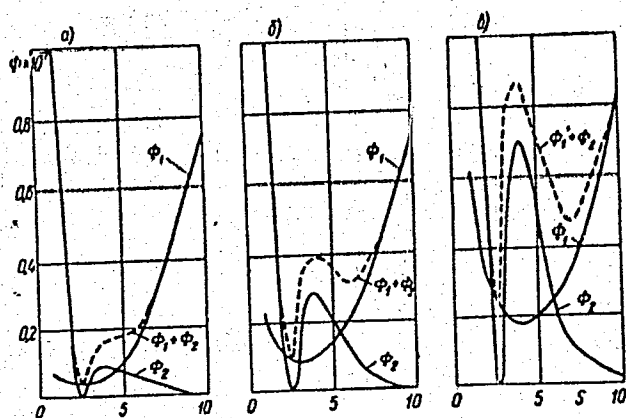


Fig.3.

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VENEDIKTOV, V.N., inzh.; ZELENIN, V.M., kand.tekhn.nauk

Use of electronic computers for studying the temperature fields
of steam turbine rotors. Teploenergetika 9 no.11:18-22 N '62.

(MIRA 15:10)

(Impellers--Thermal properties) (Electronic computers)

S/114/63/000/002/001/003
E194/E155

AUTHOR: Zelenin, V.M., Candidate of Technical Sciences

TITLE: Thermal design of a turbine on a 'УРАЛ' (Ural) computer

PERIODICAL: Energomashinostroyeniye, no.2, 1963, 21-23

TEXT: Several variants of a double frame impulse-type turbine were calculated on a 'Ural' digital computer by A.V. Shegl'yayev (Parovyye turbiny (Steam turbines), Gosenergoizdat, 1955). The steam variables in the investigation were: steam delivery rate to the turbine; inlet and exhaust steam conditions; heat-drop distribution between regulating stage and turbine sections; permissible peripheral speeds for the regulating and subsequent stages of the h.p. and l.p. rotors; mean diameter of the regulating stage, d_p ; ratio of blade diameter to height in the last stage $\lambda = d/\ell$; the distribution of the degree of reaction ρ over the length of the flow path; the velocity ratio u/c_0 ; the turbine blading angles. The 'Ural' computer with a speed of 100 operations per second requires a fairly rigid basic programme for the design of a single variant of the turbine, whereas the programmes of
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changes in the various parameters and transition from one variant to another should be formulated and corrected according to the particular investigation. In future a 'Ural-2' machine with a speed of 5000 operations per second may permit automatic change of initial data over a wider range, and it will be necessary to work out the indications by which the machine itself can select the optimum solution. Thermal calculation from the velocity triangle is suited to a computer. The method of model stages can be used but requires considerable preparatory work to approximate available graphical experimental data on model stages. The thermal calculation is carried out in two stages: a preliminary distribution of heat-drops over the sections and stages of the turbine, and determination of the number of stages; then a detailed design of the turbine with determination of steam velocity, power losses, efficiency and output by stages and for the turbine as a whole. In the particular case considered the initial data included the steam pressure beyond the regulating stage and beyond the high-pressure turbine. The first step is to construct a curve of available heat-drops from the given law of change of mean stage parameters and a velocity ratio curve.

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$$d_i = a + bx + cx^2. \quad (1)$$

The number of stages is determined from the available heat-drop in the particular section of the turbine H_0 , allowing for the heat-return factor $\alpha = 1.2$ divided by h_{cp} the mean heat-drop per stage. If a fractional number of stages comes out, the computer is stopped for correction or for rounding off in the usual way. The heat-return factor is then determined more accurately from:

$$\alpha = k(1 - \eta_{oi}) \frac{H_0}{100} \frac{z - 1}{z} \quad (3)$$

Blade lengths are determined, and finally the heat-drops for each stage of the h.p. and l.p. parts of the turbine. In the two last stages some variations are possible in the mean diameters, and that of the h.p. part is found from the permissible peripheral velocity and the speed. In the second part of the calculation the stage pressures are successively calculated. As the heat-drop on the regulating stage is given, this stage can be designed in advance. In programming the stage design it is convenient to separate out Card 3/5

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the part of the calculation common to the guide and runner blades, which consists of a typical calculation of a single set of blades with determination of steam peripheral and angle velocities and their components, with given heat-drops and calculated losses. In some variants of the calculation a super-critical pressure ratio is found for individual stages and in this case the method of calculation allows for steam expansion in the skew-section of the convergent nozzles. For calculation of blade inlet losses the following formulas are given:

$$\omega_{iy} = \omega_1 \sin \theta_1 \quad (10)$$

$$\omega_{ld} = \omega_1 \cos \theta_1 \quad (11)$$

$$\sin \theta_1 = \sin(\beta_{ld} - \beta_1) = \sin \beta_{ld} \cos \beta_1 - \cos \beta_{ld} \sin \beta_1 \quad (12)$$

$$\cos \theta_1 = \cos(\beta_{ld} - \beta_1) = \cos \beta_{ld} \cos \beta_1 + \sin \beta_{ld} \sin \beta_1 \quad (13)$$

where $\sin \beta_{ld} = \frac{\omega_{la}}{\omega_1}$ and $\cos \beta_{ld} = \frac{\omega_{lu}}{\omega_1}$.

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Various leakages and losses are calculated by well-known formulas.. In thermal calculations of turbines it is necessary to determine the following steam conditions: the entropy, enthalpy, pressure, specific volume and steam dryness. For this purpose steam tables are included in the computer memory device, in one case covering the range of 110 - 2 atm (for the h.p. unit) and another the range 9 - 0.4 atm (for the l.p.). The characteristics of the programme and results of the calculations are explained. In these computer investigations an analysis was made of: the influence of peripheral velocity, change in reaction, velocity ratio, $\lambda = c' / c$ for the last stage, the number of stages, and other factors. The results showed that computers are well suited to solving problems of this kind. The intention is to improve the procedure and to formulate a library of programmes covering various types of turbine and of investigation. There is 1 figure.

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BICHAYEV, B.P., kand.tekhn.nauk; ZELENIN, V.M., kand.tekhn.nauk

Electron model of a marine gas turbine plant. Sudostroenie 29
no.10:26-29 0 '63. (MIRA 16:12)

ZELENIN, V.M., kand.tekhn.nauk; SHILOV, V.A., kand.tekhn.nauk

Use of electronic computers for calculating potential flow about
aerodynamic lattices of turbomachines. Energomashinoostroenie 9
no.11:39-41 N '63. (MIRA 17:2)

INTRODUCTION

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ASSOCIATION: none

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ZELENIN, Ye.

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Card 1/1 Pub. 128 - 22/25

Authors : Chebotarev, V. F.

Title : Letter to the editor

Periodical : Vest. mash. 35/4, page 90, Apr 1955

Abstract : In a letter to the editors of the periodical, Vestnik Mashinostroyeniya,
the author offers a review of the book by Ye. V. Zolotarev, entitled,

Institution :

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