

Begin<sup>x</sup>

#629

~~ANSEL RUD, L.C.~~

ANSEL RUD, L.C., referent; TUPCHAK, V.M.

Soaking pits at the Abbey Works (from "Journal of the Iron and Steel Institute" no. 1, 1956, "Iron and Steel Engineer" no. 11, 1953). Stal' 16 no. 10:948-949 0 '56. (MIRA 10:9)  
(Great Britain--Rolling mills)

TUMCHENOK, V. I.

Jet washing of friction units. T Cement 29 no.2:17 Mr.-Ap '63.  
(MIRA 16:4)

1. Yuzhukrtsemremont.

(Cement plants—Equipment and supplies)

TUMEL', F.

SOKOLOV, A. V. and TUMEL', F., "Map Showing the Extension of Permafrost in SSSR," No 2, p 97.  
(Meteorologiya i Gidrologiya, No 6 Nov/Dec 1947)

SO: U-3218, 3 Apr 1953

TUMEL, V. F.

*Geophysics*

DECEASED 1947

SEE ILC

JUSTINAS TUMENAS

(JUBILIEJINIS LEIDINYS. Redagavo ir esleido Vanda Turenienė-Mingailaitė)

Chicago, Lithuania 1959. 174 p.

Monthly List of East European Accessions, (EEAI) LC, Vol. 9, No 1, Jan. 1960

Uncl.

RUDAKOV, V.K., inzh.; TUMENKO, N.R.

Calculating the rise of ground water in a land mass between rivers  
as a result of the creation of a reservoir. Gidr. stroi. 32  
no.2:35 F 62. (MIRA 15:7)

(Water, Underground)

TUMERMAN, B. M.

Topchiev, A. V., and Tumerman, B. M.

Polymerization of isobutylene and isoamylenes in the presence of the boron fluoride-ether complex

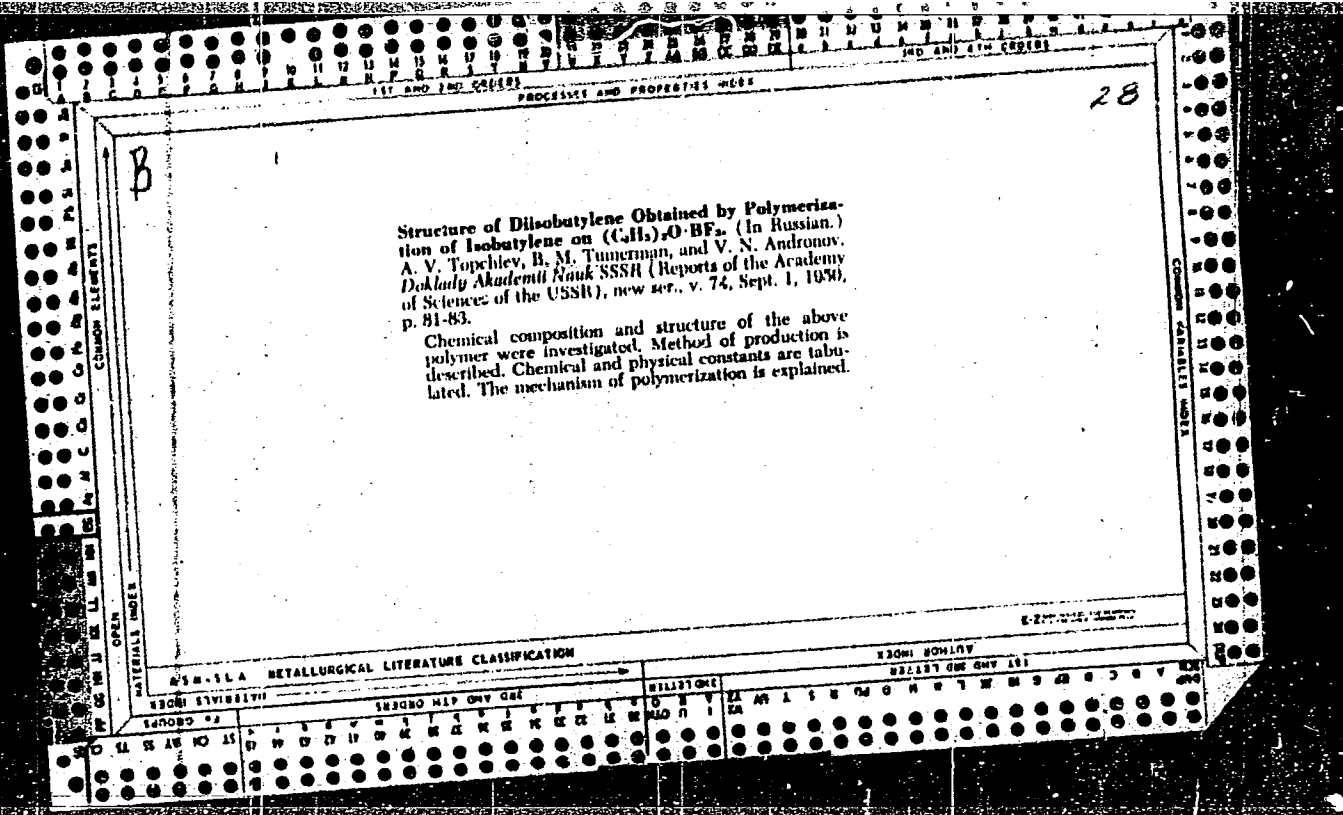
Neftyanche Khoz., Vol. 24, No. 11, 1946, pp. 45-50

Chem. Abs., Vol. 41, p. 3946-e

Isobutylene and the isoamylenes easily polymerize in the liquid or vapor phase in the presence of boron fluorid-ether complex. The prepn. of the complex  $(C_2H_5)_2OBF_3$  is described. Isobutylene is converted to 90-95% of a polymer consisting of 26% dimer, 65% trimer, and a small amount of residue b. above 180°. With isoamylenes the polymer yield is 80% in the liquid phase and 90% in the vapor phase, being chiefly trimer. The amt. of catalyst required for the reaction in liquid phase is 1-2%, and substantially less in the vapor phase. The total yield of polymer and the ratio of dimer to trimer remain fairly const. at the different temps. and with different catalyst carriers (activated C, pumice, silica gel, alumina, or Cu chips). Vapor phase polymerization is conducted preferably at 5°, because at this temp. the catalyst has less tendency to sep. from the carrier. The dimmers of isobutylene and isoamylenes have an octane no. of 99 and 85, resp., by the motor method.







10

CA

Structure of the triisobutylene prepared by polymerization of isobutylene over  $(C_2H_5)_2O \cdot BF_3$ . A. V. Popchuk, B. M. Zimmerman, and V. M. Andronov. *Doklady Akad. Nauk S.S.S.R.* 74, 205 (1950). The triisobutylene fraction b. 175 Kp., obtained by polymerization of  $Me_2C=CH_2$  over  $(Et_2O) \cdot BF_3$ , was oxidized by chromic acid according to Bailev [J. Russ. Phys. Chem. Soc. 2, 197 (1878)] for 12 days at room temp., and yielded a mixt. of equal amts. of  $(Me_2CCH_2)CHCO_2H$  (I), m. 88-9° (from  $(Me_2CCH_2)_2C \cdot CH_2$ ), and  $Me_2CCH_2CMe_2CHCO_2H$  (II), m. 129° (from  $Me_2CCH_2CMe_2CHCO_2H$ ); the residual neutral products were reoxidized as above with more concd.  $H_2SO_4$ , yielding about amts. of I, m. 85-9°. The presence of some  $Me_2CO$  in the oxidation products indicated the possible presence in the original triisobutylene of small amts. of  $Me_2CCH_2CMe_2CH_2CMe_2CH_2$  and  $Me_2CCH_2CMe_2CH_2CMe_2CH_2CMe_2CH_2$ ; indication of some satd. components was had from the detn. of the Ir no.; the paraffins were not isolated. The pure olefins, isolated through  $Hg(OAc)_2$ , had  $n_D^{20}$  1.4310,  $d_4^{20}$  0.7843,  $PhNH_2$  point 60°. The polymerization with  $(Et_2O) \cdot BF_3$  is believed to proceed through an initial disson. of the catalyst, followed by normal action of the free  $BF_3$ , forming at the free end of the olefin link in  $Me_2C=CH_2$  an active adduct which reacts according to the Markovnikov rule in the further steps of the polymerization, in which carbonium ions participate and which involve Me and H transfers leading to the final products. G. M. Kosolapoff.

1957

TUMERMAN, B.M.

AID P - 551

Subject : USSR/Chemistry

Card 1/1 Pub. 78 - 17/29

Authors : Topchiyev, A. V., Tumerman, B. M., Andronov, V. N. and Korshunova, L. I.

Title : Boron fluoride complexes as catalysts for the alkylation of phenol with olefins

Periodical : Neft. Khoz., v. 32, #7, 65-69, J1 1954

Abstract : The preparation of several boron fluoride complexes and their use in the alkylation of phenol with olefins is described. The boron fluoride complex with ethyl ether proved to be the most effective of the catalysts investigated. The catalysts are arranged in a series according to their decreasing activity. One chart, 1 table and 5 Russian references (1937-1952).

Institution : None

Submitted : No date

GERVITS, E.S.; TOMERMAN, B.M.

Condensation of o-ethylphenol and ketones in the presence of  
hydrogen chloride. Neftseper. i naftakhim no.7:35-37 '65.  
(MIRA 18:12)

1. Moskovskiy ordena Trudovogo Krasnogo Znameni institut  
neftekhimicheskoy i gazovoy promyshlennosti imeni akademika  
Gubkina.

TOPCHIEV, A.V.; TUMERMAN, B.M.

Alkylation of phenol with olefins in presence of catalysts  
containing boron fluoride. Trudy MHI no.23:9-21 '58.  
(MIRA 12:1)

(Phenols)

(Alkylation)

(Catalysts)

SOV/ 20-120-1-23/63

AUTHORS: Topchiyev, A. V., Member, Academy of Sciences, USSR, Tumerman,  
E. M., Fedorova, T. A.

TITLE: The Phenol Alkylation by Means of Diisobutylene and Triisobutylene in the Presence of Borofluoride-Containing Catalizers (Alkilyrovaniye fenola diizobutilenom i triizobutilenom v prisutstvi katalizatorov, soderzhashchikh ftoristy bor)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 120, Nr 1, pp. 90 - 93 (USSR)

ABSTRACT: As already reported (Reference 1) the alkylation mentioned takes place by means of low olefines with a high yields. This led to the surmise that the borofluoride ethyl ether complex  $(C_2H_5)_2O \cdot BF_3$ , and also orthophosphoric acid saturated with boron fluorate  $H_3PO_4 \cdot BF_3$  as well as borofluoride monohydrate will prove suitable also as active catalyzers. Production, physical-chemical properties and the catalytical effect are described (Reference 4). The test arrangement is described. Table 1 shows the reaction

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The Phenol Alkylation by Means of Diisobutylene and SOV/20-120-1-23/63  
Triisobutylene in the Presence of Borofluoride-Containing Catalyzers

with  $(C_2H_5)_2O.BF_3$  under different conditions. Figure 1 shows the relation of yield and temperature. Yield rises with an increased amount of catalyzers from 1 to 5%. Temperatur increase and a prolonged duration of reaction led to a reduction of yield. Optimum results were attained with tests lasting 3 hours,  $70^\circ$  and a catalyzer amount of 5% calculated on the basis of phenol. The experiments with the two other catalyzers were carried out by the same method. Results are shown in table 2, figures 1 and 3. Table 2 shows that in the case of temperature increase of  $50$  to  $100^\circ$  and with a catalyzer amount of 1 to 5% as well as in the case of a prolonged duration of the test of ~~from 2 to~~ 4 hours the alkylate yield increased by 5%. The alkylation products are p-tert.-octylphenol and dodecyclic phenol the properties of which are mentioned. There are 3 figures, 1 table and 4 references, which are Soviet.

SUBMITTED: October 19, 1957

Card 2/3



The Phenol Alkylation by Means of Diisobutylene and SOV/20-120-1-23/63  
Triisobutylene in the Presence of Borofluoride-  
Containing Catalizers

1. Phenol--Chemical reactions
2. Alkyl halides--Chemical reactions
3. Butenes--Chemical reactions
4. Complex compounds--Catalytic properties
5. Boron fluoride--Catalytic properties

Card 5/5

TOPCHYEV, A.V., akademik; TUMERMAN, B.M., kanidat tekhnicheskikh nauk,  
dotsent; ANDRONOV, V.N., inzhener.

Studying the chemical composition of polymerization products of  
propene in the presence of boron fluoride etherate. Trudy MNI  
no.11:185-196 '51. (MLRA 10:3)  
(Propene) (Boron fluoride) ( Polymerisation)

TUMERMAN, D. A.  
LEVSHIN, GR, 1935, 276-8

TUN, Aleksandr Yakovlevich; IVANOV, Andrey Osipovich; KOFMAN, K.D.,  
red.; BORUNOV, N.I., tekhn. red.

[Repair of the electrical machines of electric drives] Na-  
ladka elektricheskikh mashin elektroprivodov. Moskva, Gos-  
energoizdat, 1963. 94 p. (Biblioteka po avtomatike, no.85)  
(MIRA 16:12)

(Electric driving)  
(Electric machinery--Maintenance and repair)

TUN, Aleksandr Yakovlevich; ROZMAN, Ya.B., rod.

[Adjustment of noncontact-type equipment of electric drives] Naladka beskontaktnoi apparatury elektropri-  
vodov. Moskva, Izd-vo "Energiia," 1964. 86 p. (Bib-  
lioteka po avtomatike, no.120) (MIRA 18:1)

TUN, Aleksandr Yakovlevich; KOFMAN, K.D., ed.

[Adjustment of contactor-relay equipment and cranes]  
Naladka kontaktorno-releinoi apparatury i tormozov  
Moskva, Izd-vo "Energia," 1964. 127 p. (Biblioteka  
po avtomatike no.114) (MIRA 18:1)

TUN, Aleksandr Yakovlevich; MITEL'MAN, M.V., otv.red.; SINYAVSKAYA,  
Ye.K., red.izd-va; ANDREYEV, S.P., tekhn.red.

[Adjustment and operation of the electric equipment of blast  
furnaces] Naladka i ekspluatatsiia elektrooborudovaniia  
domennykh pechei. Khar'kov, Gos.nauchno-tekhn.izd-vo lit-ry po  
chernoi i tsvetnoi metallurgii, 1960. 143 p.

(MIRA 14:1)

(Blast furnaces--Equipment and supplies)

TUN, A. Ya.

8(0)

PHASE I BOOK EXPLOITATION

SOV/1546

Tun, Aleksandr Yakovlevich, and Andrey Osipovich Ivanov

Naladka elektricheskikh apparatov i mashin v skhemakh elektroprivoda (Adjustment of Electrical Equipment and Machinery of Electric Drive Systems), Moscow, Gosenergoizdat, 1958. 159 p. 21,000 copies printed.

Ed.: K.D. Kofman; Tech. Ed.: A.M. Fridkin.

PURPOSE: This is a handbook for technicians adjusting and inspecting electric drive equipment.

COVERAGE: The authors describe practical methods of adjusting machines and equipment of electric drive systems. They discuss adjustment and testing of equipment during installation and operation and provide examples of equipment characteristics and oscillograms. The book is based on the work experience of the adjusting departments of GPI "Tyazhpromelektroproyekt". The authors thank V.I. Krupovich and K.D. Kofman for their help. They mention the book by V.S. Khmelevskiy, "Electric Drive Adjustment." There are no references.

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Adjustment of Electrical Equipment (Cont.) SOV/1548

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Adjustment of Electrical Equipment (Cont.)

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AVAILABLE: Library of Congress (TK2189.T8)

JP/sfm  
5-8-59

Card 3/3

TUNAKAN, S

84054

S/147/60/000/003/013/018  
E191/E481

26.2120

AUTHOR: Tunakov, A.P.

TITLE: Certain Results of Tests on Centripetal Turbines

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1960, No.3, pp.87-98

TEXT: A centripetal turbine was made and tested between 1956 and 1958 in the Turbo-Machinery Department at the Kazan' Aviation Institute. In the test rig, compressed air from a centrifugal blower was fed to a single start volute of rectangular cross-section surrounding the turbine. The variation of the cross-section was formed by interchangeable timber inserts. To obtain uniform inflow into the nozzle ring, two beaded entry rings of lemniscate cross-section were fitted. The nozzle ring consisted of 22 flat plates with rounded edges of 3 mm thickness but was later changed into 22 straight blades of symmetrical profile (preferably of C-4 compressor section with 12% thickness ratio). The clearance between the rotor and the nozzle blades was 10 mm. The rotors were modified turbo-supercharger impellers of open design. A seal was arranged at the rim and the leakage air was allowed to escape to atmosphere via a receiver tank and a measuring nozzle. The inlet air pressure was varied between 50 and 200 mm mercury column, the  
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E191/E481

Certain Results of Tests on Centripetal Turbines

inlet temperature between 20 and 70°C, the turbine speed between 800 and 9800 rpm, and the mass flow between 0.5 and 1.5 kg/sec. The power (up to 20 hp) was absorbed by an electric brake. The torque speed and mass flow were measured and a pressure traverse was taken at the inlet and outlet of the turbine. The friction and disc windage losses were obtained with the help of a dummy wheel without blades. Methods of integrating the results of the traverses are given in detail. Six variants of turbine rotors were tested. All had an outside diameter of 260 mm, an entry width of 19 mm and a hub diameter of 52 mm. The outside diameter at the outlet was varied between 112 and 165 mm. The total depth of the blades was varied between 55 and 65.4 mm. The characteristic curves obtained by measurement are reproduced in Fig.6 and 7, in terms of non-dimensional torque and non-dimensional mass flow, plotted against the non-dimensional peripheral speed, and in terms of the relative internal efficiency and the degree of reaction plotted against the non-dimensional peripheral speed. In some variants, a zone of reverse flow was revealed near the hub. In variants with a lower degree of reaction, the efficiency was higher. In all

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Certain Results of Tests on Centripetal Turbines

variants, the maximum efficiency was obtained at a peripheral speed ratio of about 0.65 and itself had a value of 65%. The distribution of losses is shown in Fig.8 for one of the variants. In a centripetal turbine the outlet loss has no minimum. There are 8 figures and 1 table.

ASSOCIATION: Kazanskiy aviatsionnyy institut Kafedra turbomashin  
(Kazan Aviation Institute, Chair of Turbog-Machinerv)

SUBMITTED: March 1, 1960

Card 3/3

TUNAKOV, A.P.

Processing results of the traversing of turbines by means  
of an electronic digital computer. Izv. vys. ucheb. zav.;  
av. tekhn. 7 no.3:87-95 '64. (MIRA 17:9)

ODIVANOV, L.N.; TUNAKOV, A.P.

Investigating a Francis turbine with low blades and large clearances. Izv.vys. ucheb.zav.; av.tekh. 7 no. 1:133-144 '64. (MIRA 17:5)



88617

S/147/60/000/004/009/016  
E191/E281

26.2120

AUTHOR:

Tunakov, A. P.

TITLE:

The Effect of the Radial Clearance on the Operation  
of a Centripetal Gas Turbine

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy,  
Aviatsionnaya tekhnika, 1960, No. 4, pp. 83-92

TEXT:

Tests carried out at the Laboratoriya Turbomashin  
Kazanskogo Aviatsionnogo Instituta (Turbo-Machinery Laboratory  
of the Kazan' Aviation Institute) are reported. They were  
devoted to the relation between the radial clearance (between the  
tips of the turbine vanes and the inside edges of the nozzle  
blades) and the efficiency of the turbine. In the experimental  
air turbine, the nozzle blades had a symmetrical profile. The  
radial clearance could be varied at a constant blade setting  
angle. The turbine power was measured by an electric brake. Prior  
calibration gave the windage and bearing losses. The inlet  
pressure was maintained at 150 mm mercury column. Its exact value  
was adjusted to hold a constant expansion ratio of 1.208. The  
speed was varied between 1100 and 9600 r.p.m. Measurements were  
taken to determine the efficiency, power, mass flow and degree of

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E191/E281

The Effect of the Radial Clearance on the Operation of a Centripetal Gas Turbine

X

reaction of the turbine. The efficiency plotted against the speed ratio yields similar curves for any clearance between 0.2 and 27.9 mm with a maximum of about 66% at a speed ratio of 0.65. The largest difference amounted to 5.5% efficiency gain with the largest clearance. With a constant value of the nozzle blade outlet angle, the degree of reaction and the mass flow are independent of the clearance. An optimum value for the clearance was expected and found. The relative efficiency drop referred to maximum efficiency is plotted against the length of the path of an air particle in the clearance space, which is a function of the clearance and the outlet angle. With reduced wall friction (increased Reynolds Number) the optimum efficiency appears at larger clearances, because the losses due to the fluctuating entry into the turbine wheel are reduced. The losses due to friction are evaluated. The difference between the measured losses and the calculated friction losses yields the losses due to fluctuation which have a maximum at zero clearance where they are

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The Effect of the Radial Clearance on the Operation of a Centripetal Gas Turbine

expressed by a loss coefficient of 0.2. An evaluation of erosion which takes place at the nozzle blades was made. Any particles which enter the clearance space tend to circulate continuously. The erosion will be greater with larger and more dense particles, with a smaller radial clearance, a smaller number of turbine vanes and a larger peripheral speed. These qualitative relations were confirmed experimentally. The noise increased with decreasing clearance, beginning with a clearance of about 5 mm. At a clearance of 0.2 mm the noise increased sharply. There are 7 figures and 4 Soviet references. ✓

ASSOCIATION: Kazanskiy aviatsionnyy institut, Kafedra turbomashin (Kazan' Aviation Institute, Department of Turbomachinery)

SUBMITTED: June 9, 1960

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31866  
S/123/61/000/023/018/018  
A052/A101

26.2120

AUTHOR: Tunakov, A. P.

TITLE: On the losses in the flow-through section of the centripetal turbine

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 23, 1961, 31, abstract 23I201 ("Tr. Kazansk. aviats. in-ta", no. 63, 1961, 3-16)

TEXT: The results of testing an experimental centripetal turbine are analyzed. The qualitative process of the change of the following losses is considered: the output loss, the incomplete expansion loss, the loss due to an unmatched vortex, the loss connected with the non-optimum angle of attack and the loss connected with the degree of reactivity ( $\rho$ ). In the centripetal turbine the gas consumption changes with the change of the number of revolutions. This affects the character of the change of the output loss. The speed hodograph  $C_2$  represents, at the changing number of revolutions, either a convex or a concave curve. In case of a convex curve speed  $c_2$  and the output loss have minimum at  $\alpha_2 > 90^\circ$  ( $\alpha$  is the flow exit angle). In case of a concave curve speed  $c_2$  and the output loss have no minimum at all and decrease continuously with the in-

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A052/A101

On the losses in the flow-through section ...

crease of the number of revolutions. The magnitude of the incomplete expansion loss has its maximum at a small vorticity of the flow and decreases with the increase of vorticity in either direction. In the channels of the runner circulation flows directed against the runner rotation are observed. Owing to the difference of pressures on the both sides of blades secondary flows appear. At the root of blades the circulation and secondary flows have opposite directions and damp each other; on the periphery they coincide in direction and intensify. Thus the secondary flow in the centripetal turbine has the character of an unmatched vortex. This causes a local break of the flow and a local increase of losses and of the flow exit angle. The losses in the runner depend essentially on the angle of attack at the runner inlet and have minimum at a certain positive angle of attack. A displacement of this minimum is caused by the circulation flow which forces the flow at the runner inlet to change direction. With an increase of  $\rho$  the flow acceleration in the runner increases and the losses decrease. With a decrease of  $\rho$  the losses still decrease owing to the decreased velocity of gas. At the same time the losses in the nozzle apparatus increase. The summary losses in the runner and nozzle apparatus do not depend practically on  $\rho$  at its mean values. A decisive effect on the efficiency has

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A052/A101

On the losses in the flow-through section ...

the change of the output loss, which decreases as  $\rho$  decreases. At low  $\rho$  the emergence of a backward flow at the hub of the runner, and consequently a sharp drop of efficiency is possible. There are 5 references and 8 figures.

S. Rychkov

[Abstracter's note: Complete translation]

Card 3/3

X

ODIVANOV, L.N.; TUNAKOV, A.P.

Some results of the investigation of the TRP-14 turbocompressor.  
Trudy KAI no.76:143-156 '63. (MIRA 19:2)

1. Submitted February 15, 1963.

S/147/63/000/001/013/020  
EO31/E181

AUTHOR: Tunakov, A.P.

TITLE: Disk losses in a radial-axial turbine

PERIODICAL: Investiya vysshikh uchebnykh zavedeniy,  
Aviatsionnaya tekhnika, no.1, 1963, 116-125

TEXT: Although it is important to have an accurate determination of disk losses, the recommended methods for determining them are conflicting. Various authors have used different expressions for the windage power of a smooth disk. By reducing these to a common form, the present author compares the various expressions and thus demonstrates the need to use a more reliable expression. A definition of disk losses is given which makes it possible to determine them easily by experiment. The coefficient  $\beta$  which appears in the expression for the windage torque is regarded as consisting of two parts, taking account of losses at the front and the rear surfaces separately. Experiments to determine these coefficients are described, and empirical relations for them given. There are 8 figures.

SUBMITTED: May 16, 1962

Card 1/1



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EPA/EMT(m)/BDS

AEDC/AFFTC/ASD

Pa-4

ACCESSION NR: AP3004729

8/0147/63/000/002/0111/0117

56

AUTHOR: Tunakov, A. S.

TITLE: Calculating an arbitrary regime of a radial-axial turbine

SOURCE: IVUZ. Aviate. tekhnika, no. 2, 1963, 111-117.

TOPIC TAGS: gas turbine, gas-turbine parameter, radial-axial turbine, arbitrary-turbine-regime calculation, turbine, axial turbine, centrifugal turbine, centripetal turbine, reaction degree, turbine efficiency, turbine power

ABSTRACT: A method is presented for evaluating gas-turbine parameters under arbitrary operating conditions or in the case when the gas parameters deviate from nominal values. A similar, less accurate method for axial-flow turbines was developed earlier by M. K. Maksutova (Rabota odnostupenchatoy gazovoy turbiny\* na nerashetnom rezhime. Teploenergetika, No. 9, 1954). The present method gives the procedure and the formulas for determining the reduced velocity, gas-flow rate, overall turbine efficiency, internal efficiency, turbine power, degree of reaction, and the calculation error due to the approximation used. The accuracy of the method is illustrated by a comparison of calculated results. This method can also be used for evaluating axial, centripetal, and centrifugal turbines.

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ACCESSION NR: AP4033050

S/0147/64/000/001/0133/0144

AUTHOR: Odivanov, L. N.; Tunakov, A. P.

TITLE: Study of a radial-axial turbine with low blade heights and large clearances

SOURCE: IVUZ. Aviatzionnaya tekhnika, no. 1, 1964, 133-144

TOPIC TAGS: turbine, turbocompressor, blade, blade size, turbine efficiency, turbine blade, turbinenozzle, turbine wheel, turbine design

ABSTRACT: A radial-axial (centripetal) turbocompressor turbine, the TKR-14 (air trial efficiency = 0.65), was developed in order to facilitate the study of the effect of various factors on the operation of such turbines. The author reviews the recommendations that were made with a view toward increasing the efficiency of this experimental model. Subsequently, the running assembly of this model was redesigned to permit the direct measurement of the internal power (moment) of the turbine when operating with blades of small height. A sketch of this version of the experimental turbine with a braking unit is shown in Figure 1 of the Enclosure. The modifications made on this model in accordance with the recommendations are discussed in detail and it is shown that efficiency was

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ACCESSION NR: AP4033050

increased 16% to 87%, despite the small size of the turbine. A diagram is given, showing the section between the inlet and outlet valve through which the steam passes (the "flow-through section") for various blade heights. The reduction of blade height in axial turbines leads to a reduction of efficiency. Noting the almost total lack of information in available literature on this subject and the absence of recommendations with respect to blade height for the calculation of radial-axial turbines, the experimental work on the test turbine was continued. An analysis of the effect of end clearance (that is, the clearance between the blades of the working wheel and the frame) on the operation of such a turbine was also carried out. These tests showed that efficiency increases to a certain limiting blade height (in the case of the authors' turbine  $\bar{r}_1 = 0.075$ ). By virtue of the increase in the curvature of the end wall, causing an increase in flow turn losses, a slight reduction of efficiency may begin if the blade height is further increased. The reduction in efficiency which accompanies small blade heights is fundamentally the result of increased disk and nozzle losses. With  $\bar{r}_1$  reduced from 0.118 to 0.0286, disk losses rose from 2% to 9%, and nozzle losses from 2.2% to 5%. Losses in the working wheel were minimal at  $\bar{r}_1 = 0.05$ . Profiling of the nozzle unit end wall resulted in a 4% efficiency increment.

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ACCESSION NR: AP4033050

Thus, improvements in the "flow-through section" of the turbine (that is, the section between the inlet and outlet valve through which the steam passes) resulted in an efficiency increase from 0.71 to 0.87. Losses caused by the end clearance (between the blades of the working wheel and the frame) in radial-axial (centripetal) turbines comprise 1% - 1.5% for each percent of increase in the relative clearance. This is considerably lower than the same losses in axial turbines having blades without banding (1.4% - 2.6% losses for each percentage point of radial clearance). Increasing the end clearance leads to higher output losses. As the end clearance is increased, flow non-uniformity at output from the wheel also increases. Orig. art. has: 8 figures.

ASSOCIATION: None

SUBMITTED: 23Apr63

DATE ACQ: 11May64

ENCL: 01

SUB CODE: PR

NO REF SOV: 007

OTHER: 001

Card 3/4

ACC NR: AT6007564

UR/2529/63/000/076/0143/0156

AUTHOR: Odivanov, L.N.; Tunakov, A. P.

73.

B+1

ORG: Kazan Aeronautical Institut, Kazan (Kazanskiy aviatsionnyy institut)

TITLE: Some results of tests of the turbocompressor type TKR-14<sup>23</sup>

SOURCE: Kazan. Aviatsionnyy institut, Trudy, no. 76, 1963. Aviatsionnyye dvigateli (Aircraft engines), 143-156

TOPIC TAGS: turbine compressor, turbosupercharger, turbosupercharged engine, diesel engine, engine test stand, combustion chamber, model test, performance test, aerodynamic design/TKR-14 turbine compressor<sup>10</sup>

ABSTRACT: Test were conducted on the TKR-14 turbocompressor, a turbosupercharger for diesel engines, to measure performance and obtain development ideas. Fig.1 shows schematically the test stand, location of measuring probes, the physical quantities measured and the mounted turbocompressor. For drive simulation, compressed air entered a combustion chamber C at inlet I<sub>t</sub> and exhausted at X<sub>t</sub>. Compressor air entered at I<sub>c</sub> and exhausted at X<sub>c</sub>. Pressure (P)<sub>t</sub>, flow, (h) and temperature (T) and (ΔT) were measured. The compressor was tested first. The results are given for reduced RPM and flow values. The thru-flow part of the compressor was studied aerodynamically to define improvement needs. The turbocompressor characteristics were determined last. The maximum efficiency of the integrated unit turned out to be only 40%, much below best current values of 62-64%. Improvements are suggested. The efficiency was defined as the ratio

Card 1/2

L 22009-66

ACC NR: AT6007564

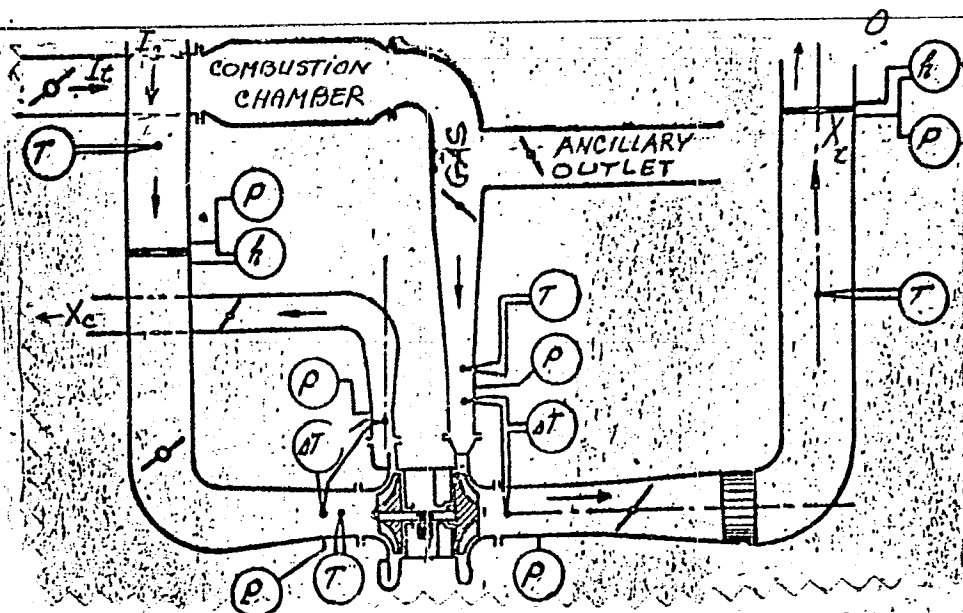


Fig. 1.  
Schematic of the  
turbocompressor  
test stand.

of the adiabatic compression work of the compressor air to the adiabatic expansion work of the turbine air. Orig. art. has: 7 figures.

SUB CODE: 21

SUBM DATE: 15Feb63

ORIG REF: 004

OTH REF: 000

Card 2/2 BK

L 47169-66 EWT(l)/EWT(m)/EWP(f)/T-2 JD/WW/WE

ACC NR: AP6032181

SOURCE CODE: UR/0096/66/000/010/0039/00<sup>h</sup>4

AUTHOR: Rzhavin, Yu. A. (Engineer); Tunakov, A. P. (Candidate of technical sciences)

ORG: Kazan Aviation Institute (Kazanskiy aviatsionnyy institut)

62  
B

TITLE: Investigation of the effect of variations in the flow-passage dimensions of a single-stage gas turbine <sup>2)</sup>

SOURCE: Teploenergetika, no. 10, 1966, 39-44

TOPIC TAGS: single stage gas turbine, gas turbine design, gas turbine performance, gas turbine engine, *TURBINE DESIGN, GAS TURBINE, FLOW ANALYSIS*

ABSTRACT: In designing a gas turbine, it is often necessary to know how a certain small dimensional change may affect the turbine performance. Therefore, a method is presented for calculating the so called "influence coefficients", which indicate how the change in dimensions of a flow passage area will affect the performance of any single-stage turbine. The calculation is based on the method of small deviations. Further, in the calculations, it is assumed that the flow is of the steady-state type, that flow nonuniformity along the cross section can be neglected, and a mean blading diameter is used. The calculated influence coefficients are tabulated and can be used to rapidly solve various problems encountered in the gasdynamic calculations of a gas turbine. The application of the tables is illustrated with practical examples. Orig. art. has: 18 formulas and 3 tables.

[AS]

SUB CODE: 21/ SUBM DATE: none/ ORIG REF: 004/ ATD PRESS: 5090

Card 1/1 blg

UDC: 621.438.535.6.001.24

ACC NR: AF6017837

SOURCE CODE: UR/0147/66/000/002/0126/0129

AUTHOR: Golovin, M. I.; Tunakov, A. P.

ORG: none

TITLE: Calibration of pneumometric instruments with digital computers

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 2, 1966, 126-129

TOPIC TAGS: digital computer, computer programming, turbine engine, instrument calibration equipment

ABSTRACT: For calculations with digital computers, all calibration curves must be approximated by analytical expressions. An example is the traversing of turboengines with a three point instrument. The results of the measurements must be approximated in this case by a second order parabola expressing the relationship between the true and the measured pressure ratios (see Tunakov, Aviatsionnaya tekhnika, 2, 1966). The digital computer can be programmed to automatically perform repeated calibrations by calculating the three coefficients of the parabola and to calculate the error of approximation. Such a procedure was developed with the computer "Minsk". It was set to discard results with an error larger than three times the standard deviation, the latter being usually less than about 1%. Orig. art. has: 14 equations, 1 table and 1 figure.

SUB CODE: 14/ SUBM DATE: 03Dec64/ ORIG REF: 003  
Card 1/1 2/ JB

UDC: 518.5



S/0147/64/000/003/0087/0095

ACCESSION NR: AP4043424

AUTHOR: Tunakov, A.P.

TITLE: Processing the results of turbine traversing on an electronic digital computer

SOURCE: IVUZ. Aviatzionnaya tekhnika, no. 3, 1964, 87-95

TOPIC TAGS: turbine, turbine design, turbine traversing, computer program, flow traversing

ABSTRACT: The author defines the process of flow traversing as the sequential measurement of flow parameters at a large number of points by means of pneumometric devices. For example, three-point adjustable devices permit the measurement, at each point, of the total pressure and also of the magnitude and direction of the reduced velocity  $\lambda$ . Traversing data provide a basis for the study of the velocity and pressure field in the machine as well as for the computation of the essential mean values, and for this reason traversing is widely used in experimental gas and air turbines, in the static blow-through of arrays and in the investigation of other turbine and compressor elements. In view of the inordinate amount of time and labor needed to process the results of flow traversing, the use of electronic digital computers would be of considerable benefit. The author then analyzes the parameters which are normally

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ACCESSION NR: AP4043424

employed in the calibration of a three-point adjustable instrument: 1. The correction  $\Delta\alpha$  for the angle indicated by the instrument. The magnitude of this correction is quite stable and there is no need to consider the effect of the flow velocity; 2. the pressure restoration factor (in well-constructed machines this factor is always equal to unity and is generally not considered); 3. The dependence of the true reduced flow velocity  $\lambda_{true}$  on the velocity computed on the basis of the instrument reading  $\lambda_{ins.}$ . In traversing, the instrument is normally moved in two directions; thus, when averaging, double integrals must be taken. For the sake of greater universality, in the program proposed in this article, single integration alone is provided for either of the directions, thus making it possible to construct graphs of already averaged values for the second direction, which is particularly desirable in the case of flow analysis. The program described was designed for the processing of traversing data for any turbine arrays under real or static conditions. The computation of a total of six integrals is provided in the program: 1. flow-rate integral; 2. integral of the adiabatic work in the expansion of the gas from the given pressure to the barometric; 3. kinetic energy integral; 4. integral of the theoretical kinetic energy;

Card 2/4

ACCESSION NR: AP4043424

5. moment integral projected to the front of the array; 6. moment integral projected to the axis of the array. The traversing processing program was developed for a "Minsk"-type electronic digital computer with an operational memory capacity of 1024 cells and a speed of up to 3,000 operations per second. Perforated-tape input was used. Certain limitations are discussed (the pneumometric device must be adjustable and the traversing intervals must be even). The number of points is odd (from 3 to 31). The program was developed for an air turbine ( $k = 1.4$ ), although it is indicated how it may be used for a gas turbine as well (use of a different adiabatic index). A block diagram of the program is given in the text. Triple-count monitoring of the correctness of the computations is provided, as well as complete restoration, prior to each computation, of the program faulted by a previous computation. The entire program is broken down into segments which are read through twice. In the event the discrepancy of two successive computations exceeds a given number, the machine stops. Integration is by the Simpson formula. Original data are printed on a tape, together with the results, for better control. Binary counting is disconnected during the third (control) computation. The author states that for the processing of nine traversing points, 26 seconds of pure machine time are expended during the basic computation and 17 seconds during the control computation (not including the time required to introduce the program and the original data). In the case of mass

Card 7/4

ACCESSION NR: AP4043424

processing, the control computation is not run and the machine processes all the data available on the tape without stepping. Orig. art. has: 4 figures, 1 table and 27 formulas.

ASSOCIATION: none

SUBMITTED: 18Jun63

ENCL: 00

SUB CODE: PR, DP

NR REF SOV: 002

OTHER: 000

4/4  
Card

ACCESSION NR: AP4045908

S/0114/64/000/009/0023/0026

AUTHOR: Odivanov, L. N. (Engineer); Tunakov, A. P. (Candidate of technical sciences)

TITLE: Investigation of the radial-axial-flow turbine of a turbocompressor

SOURCE: Energomashinostroyeniye, no. 9, 1964, 23-26

TOPIC TAGS: turbocompressor, turbocompressor design, gas turbine, radial axial turbine/TKR-14 turbocompressor

ABSTRACT: A radial-axial-flow turbine -- a part of a TKR-14 turbocompressor built by the Ural Turbomotor Plant -- was experimentally investigated. Although the turbine had been designed for a pulsating gas flow, it was tested at a constant entrance pressure, and recommendations for improving the turbine efficiency under these conditions were drawn. The nozzle-box assembly and the scroll were tested by the method of static blowdown. Inlet pressures were maintained

Card 1/2

ACCESSION NR: AP4045908

within 1.39--1.59 kg/cm<sup>2</sup>; static outlet pressure, 1.03--1.11 kg/cm<sup>2</sup>; inlet gas temperature, 350--365K in cold tests and 820K in hot tests; speed, 17,000--40,000 rpm; gas flow, 0.3--0.5 kg/sec. All types of losses in the turbine (tabulated) were found to be high. A number of design changes both in the nozzle box and in the rotor were recommended. Some of the recommendations were experimentally verified: the angle of incidence of the nozzle box was reduced to 15° and the blade profile was improved, which resulted in an 8% increase in the internal efficiency. Further design improvements brought the internal efficiency to 87%. Orig. art. has: 5 figures, 3 formulas, and 3 tables.

ASSOCIATION: Kazanskiy aviatsionnyy institut (Kazan' Aviation Institute)

SUBMITTED: 00

ENCL: 00

SUB CODE: PR

NO REF SOV: 007

OTHER: 000

Card 2/2

ISTRATI, G.; MEITERT, T.; CIUFECO, C.; TUNARU, C.; HENTIU, Valeria; DELEANU, L.

Phage typing of Shigella. III. Stability of the bacteriophage types in Shigella flexneri 2a. Arch. roum. path. exp. microbiol. 21 no.2: 288-294 '62.

1. Institut "Dr.I. Cantacuzino" (for Istrati, Meitert, Ciufeco).
2. Centre Sanitaire Antiepidemique Regional de Constantza et Centre Sanitaire Antiepidemique Regional de Brasov. (for Tunaru, Hentiu, Deleanu).

(SHIGELLA) (BACTERIOPHAGE) (BACTERIOPHAGE TYPING)

TUNAKOV, P. (Kazan'); GONCHAROV, N. (Kazan')

Device for displaying the outdoor temperature in numbers.  
Zhil.-kom. khoz. ll no.11:25 N '61. (MIRA 16:7)

1. Predsedatel' ispolnitel'nogo komiteta Kazanskogo gorodskogo  
Soveta (for Tunakov). 2. Nachal'nik laboratorii Tsentral'nogo  
proyektno-konstruktorskogo byuro (for Goncharov).  
(Kazan---Thermometers)



ZARNEA, G., Assist. Prof.; VASILIU, V.; VOICULESCU, R.; ISRAEL, H.; PEREDERY, S.;  
TUNARU, C.; SZEGLI, L.; POPESCU, F.; IONESCU, H.

A study on a Q fever focus due to horses as a source of infection.  
Rumanian M. Rev. 2 no.2:20-21 Apr-June 58.

(Q FEVER, transm.

by horses in Rumania)

(HORSES, dis.

Q fever, transm. to humans in Rumania)

TUNARU, C.

Aspects of the activities of the Laboratorul de igiena Constanta,  
since its foundation by Professor I. Centacuzino. Mikrobiologia  
(Bucur ) 8 no.6:553-556 N-D'63

1. Seful laboratorului din Inspectia de stat pentru igiena si  
protectia muncii, Constanta.

\*

TUNARU, C.

SURNAME, Given Names

Country: Rumania

Academic Degrees:

Affiliation: \*)

Source: Bucharest, Igiena, Vol IX, No 4, Sep-Oct 1961, pp 339-344.

Data: " Studies on the Incidence of Pathogenic Staphylococcus and Colibacillus As Health Indicators in Hospital Units."

Authors:

TUNARU, C., -Dr.-

CHIRU, Gh., -Dr.-

MARCU, R., -Dr.-

CIJU, A., -Dr.-

DELEANU, L., -Dr.-

CORNATIANU, I., -Dr.-

MUSAT, S., -Dr.-

\*) Work performed at the Regional Sanepid (Sanepidul Regional), Dobrogea.

670 981643

TUNAYEVSKIY, V.A.

On the 100th anniversary of Alexander Humboldt's death.  
Uch. zap. Perna. gos. un. 15 no.2:115-118 '60. (MIRA 14:12)  
(Humboldt, Alexander, 1769-1859)

TUNDER, S.

The host blast, a basic cupola furnace for various metallurgic purposes.  
p. 108.

KOHASZATI LAPOK. (Magyar Banyaszati es Kohaszati Egyesulet) Budapest, Hungary  
Ontode. Vol. 10, no. 4.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8,  
August 1959.  
Uncla.

TUNDER, Siegfried (Dusseldorf)

Vibrating ladle, a new metallurgical tool for the desulphurization  
and alloyage of molten iron. Koh lap 93 no.2: Suppl: Ontode 11 no.2:  
25-31 F '60.

TUNDREA, I.

Application of a cyclic graph to reconstruction work for a very deep shaft.

p. 7. TEHNICA NOUA. (Asociația Stiintifică a Inginerilor și Tehnicienilor)

București. Vol. 3, No. 36, Feb. 1956.

So. East European Accessions List Vol. 5, No. 9 September, 1956

TUNDUV, Sh.S.

Thrombosis of the mastoid vein. Vest. otorinolar., Moskva 15 no.3:81-82  
May-June 1953. (GIML 25:1)

1. Fellow. 2. Of the Clinic for Diseases of the Ear, Throat, and Nose,  
Second Moscow Medical Institute imeni I. V. Stalin.



TUNDUV, SH.S.

TUNDUV, Sh.S.

Retropharyngeal abscess in the aged. Vest. oto-rin. 16 no.3;  
78-79 My-Je '54. (MLBA 7:7)

1. Iz kliniki bolezney ukha, gorla i nosa (dir. deystvitel'nyy  
chlen Akademii meditsinskikh nauk SSSR prof. B.S.Probrashenskiy)  
II Moskovskogo meditsinskogo instituta imeni I.V.Stalina.

(LARYNX, abscess,  
\*retropharyngeal, in aged)  
(ABSCSS,  
\*retropharyngeal, in aged)  
(AGED, diseases,  
\*retropharyngeal abscess)

TUNESCU, G.

Some date referring to the period of light on the red beet. p. 191.  
(ANALELE. SERIA STIINTELOR NATURII. Rumania. Vol. 5, no. 11, 1956)

SQ: Monthly List of East European Accessions (BEAL) LC, Vol. 6, no. 7, 1957, July. Uncl.

TUNESCU, G.

About the respiration intensity of sugar beet seedlings in the course of vernalization. p. 195.

(ANALELE. SERIA STIINTELOR NATURII. Rumania. Vol. 5, no. 11, 1956)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 7, July 1957. Incl.

TUNESCU G.

RUMANIA/Physiology of Plants. - Growth and Development.

I-4

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10428

Author : Tunesco, G.

Inst :

Title : Some Data on the Light Stage of Red Beet.

Orig Pub : An. Univ. "C.I. Parhon", Ser. stiint. natur., 1956, No 11, 191-194

Abstract : Roots of red beet were grown under conditions of long (natural) day, short, 8-hour day, and in darkness. Under short day conditions and in darkness the stalks formed, but there was no flowering. The respiration intensity (determined by Boysen-Jensen's method) and catalase activity (determined gasometrically) were higher in plants grown under long day conditions.

Card 1/1



TUNESCU, R.

RUMANIA/Engineering  
Petroleum Industry  
Petroleum - Distillation

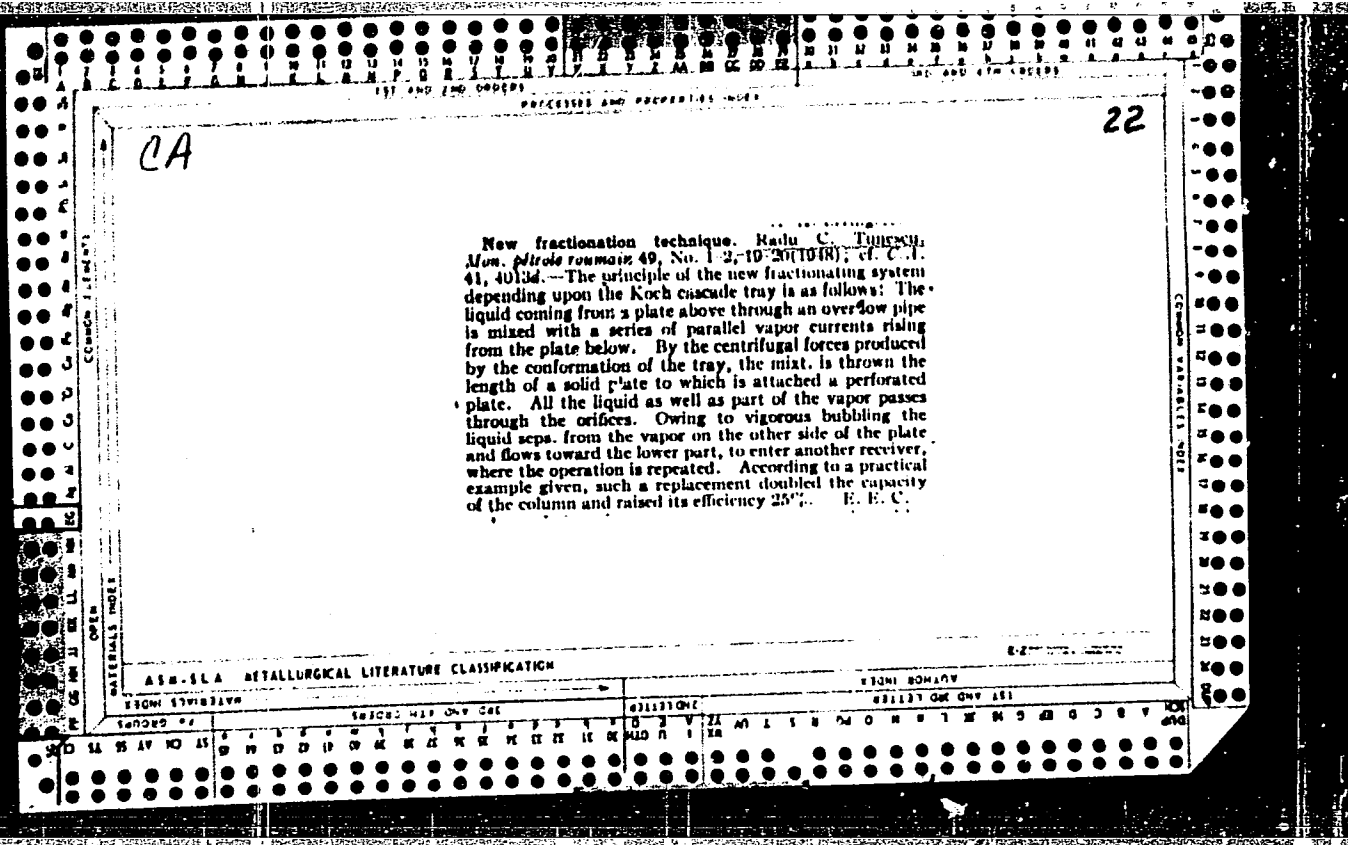
Jan/Feb 1947

"Elements of Calculations for Installations in the Petroleum Industry," V Gerchez and R. Tunescu, 8 pp

"Monitorul Petrolului Roman" Vol XLVIII, No 1/2

Eleven tables and extensive formulae used in heat exchanging and vapor heat exchanging; condensing and distilling, etc.

PA 21T25



L 33039-66 T: WE

ACC NR: AP6024216

SOURCE CODE: RU/0007/65/016/009/0482/0487

AUTHOR: Tunescu, R. C.--Tsunesku, R.; Andronic, A.--Andronik, A.

ORG: none

TITLE: Increasing the processing capacity of a vacuum-distillation plant operating according to a distillation-refining-redistillation scheme

SOURCE: Petrol si gaze, v. 16, no. 9, 1965, 482-487

TOPIC TAGS: vacuum distillation, petroleum refining

ABSTRACT: The authors describe a technological scheme they introduced to double the processing capacity of a vacuum distillation plant for asphalt-base fuel oil. The scheme allows the simultaneous distillation of the fuel and of the completely refined distillate, and according to economic calculations also results in a sizable cost reduction. Orig. art. has: 10 figures, 7 formulas and 2 tables. [Based on authors' Eng. abstract] [JPRS]

SUB CODE: 11, 07 / SUBM DATE: none / ORIG REF: 001 / OTH REF: 005

Card 1/1

UDC: 665.523.012.42.001.7



TUNESCU, R.C.; CARAS, R.

Synthetic zeolites in the petroleum refining and processing industry. Petrol si gaze 16 no.2:95-100 F '65.

TUNESCU, R.C., dr. ing.

A new method of tracing the equilibrium vaporization curve by means  
of calculation. Petrol si gaze 14, no.7:355-357 JI '63.

L 2855-66 RPF(c)/T/ WE  
ACCESSION NR: AF5026376

RU/0007/65/016/002/0095/0100

AUTHOR: Tunescu, R. C.; Caras, R.

TITLE: Synthetic zeolites in the petroleum refining and processing industry

SOURCE: Petrol si gaze, v. 16, no. 2, 1965, 95-110

TOPIC TAGS: zeolite, fuel octane rating, petrochemistry, gasoline, distillation

Abstract [Authors' English summary modified]: After a brief summary of the characteristics and principal uses of synthetic zeolites, the authors describe the preparation of synthetic zeolites of the 4A and 5A types and report their use for straight-run gasoline distillation for raising the octane rating. An increase of about 10 octane numbers was obtained by passing one part by volume of gasoline over two parts by weight of synthetic zeolite. Orig. art. has 5 figures, 2 formulas, 3 graphs and 7 tables.

ASSOCIATION: none

SUBMITTED: 00  
NO REF SOV: 004  
Card 1/1

ENCL: 00  
OTHER: 028

SUB CODE: MT, FP  
JPES

Distr: 4E3d/4E2s(j)

7  
- E. Mang  
2

7  
Separation of hydrocarbon mixtures by thermal diffusion. R. C. Tinescu and G. Negrescu. *Lucrările inst. petrol. și gaze București* 3, 177-205 (1957).—The data given in previous works on sepn. of satd. and naphthenic hydrocarbons from petroleum fractions by thermal diffusion are discussed. From exptl. work with 3 app. it has been found that: (a) spaces greater than 2.5 mm. do not produce sepn., (b) a thermal diffusion app. can be used for furfural refining, (c) in the sepn. of petroleum fractions the percentage of alkanes decreases along the column from top to bottom, the percentage of aromatics increases, while the percentage of cycloalkenes increases slightly. R. D. Slanigan

GANAGO, O.A.; TUNEV, G.Ya.; VAYSEBUD, R.A.

Rolling the blanks of bore bit shanks. Kuz.-shtam.proizv. 4 no.8:  
5-6 Ag '62. (MIRA 15:8)  
(Rolling (Metalwork)) (Forging)

TUNEYEV, M.M.; NIYAZOVA, R., red.; BABAKHANOV, A., tekhn. red.

[Mechanization as a basis for reducing the expenditure of labor] Mekhanizatsiia - osnova sokrashcheniia zatrat truda; opyt sovkhoza "Piatiletie UzSSR" Akkurganskogo proizvodstvennogo upravleniia. Tashkent, Gosizdat UzSSR, 1963. 45 p. (MIRA 17:1)

DOBREV, Ts. TUNG, N.F.

L. Capurale's operation in a patient with renal ptosis. Khirurgiia (Sofia) 17 no.1:102-104 '64

\*





*Tungachina, Z. M.*  
USSR/Medicine - Brill's Disease

FD-1623

Card 1/1 : Pub. 148-3/28

Author : Mertsalov, Ye. N.; Tungachina, Z. M.; Bendyukova, L. Ye; and Voly-nets, A. D.

Title : The problem of secondary exanthematous typhus in the Kazakh SSR

Periodical : Zhur. mikro. epid. i immun. 7, 11-13, Jul 1954

Abstract : Data on secondary exanthematous typhus [Brill's disease] obtained in epidemiological investigations carried out by epidemiologists in Kazakh SSR rayon and city sanitary-epidemiological stations in conjunction with scientific workers of the Kazakh Institute of Epidemiology and Microbiology are discussed. A brief statistical analysis of the data is given. One Soviet reference is cited.

Institution : Kazakh Institute of Epidemiology, Microbiology and Hygiene (Dir. Z. A. Roshchina)

Submitted : November 4, 1953

*From laboratory - 11*  
DARDIK, F.G.; TUNGACHINA, Z.M.

Diagnosis of Q fever in foci of Botkin's disease. Zdrav.Kazakh. 16  
no.12:42-45 '56. (MLRA 10:2)  
(Q FEVER) (HEPATITIS, INFECTIOUS)

TUNGACHINA, Z. M.

Use of salmonella O-bacteriophage in the identification of  
typhoid bacilli. Zhur.mikrobiol., epid. i immun. 42  
no.9:140-141 S '65. (MIRA 18:12)

1. Kazakhskiy institut epidemiologii, mikrobiologii i gigiyeny,  
Alma-Ata. Submitted June 9, 1964.

TUNG-SKOVA A.I.

SMELOV, N.S.; YEGOROV, G.I.; KOKOLIN, A.I.; KSANFOPULO, P.I.; RAKHMANOVA, N.V.;  
KRYLOVA, Ye.Ye.; RYKOVA, L.K.; PER, M.I.; PETRUSHEVSKIY, S.I.; PUSTOVAYA,  
A.I.; TUNGSKOVA, A.I.; VELICHKO, Ye.V.; PLAVIT, P.Ya.; GOL'DENBERG, M.M.

Evaluation of results of the treatment of early syphilis according  
to 1949 scheme. Vest. vener., Moskva No.1:29-33 Jan-Feb 52. (GLML 21:4)

1. Professor for Smelov and Per. 2. Central Skin-Venerological Institute  
(Director--N.M. Turanov) for Smelov, Yegorov, Sokolin, Ksanfopulo,  
Rakhmanova, Krylova and Rykov; Hospital imeni Korolenko (Head Physician  
Docent V.P. Volkov) for Per, Petrushevskiy; First Venereological Dis-  
pensary (Head Physician--K.A. Vinogradova) for Pustovaya and Tunguskova);  
Second Venereological Dispensary (Head Physician--V.G. Bronshteyn) for  
Velichko, Plavit and Gol'denberg.

*[DECEASED]*

CHEBUKOV, M.F.; KASHIRSKIY, Ya.A.; FONGUSKOV, A.S. [deceased]

Studies of concretes and reinforced concrete elements made  
with portland cement with an additive of pulverized ash.  
Trudy Ural. politekh. inst. no. 118:85-95 '62. (MIRA 16:6)

(Concrete Testing)  
(Ash Technology)  
(Portland cement)

TUNGUSHBAYEV, F.

Role of a continuous matte bath in reverberatory furnaces for control of crust formation. Letter to the editors comments on an article by I.A. Stroitelev, in issue No.8 of Tsvetnyye Metally. Svet. met. 38 no.6:82 Je '65. (MIRA 18:10)

*TUNGUSKOVA, A.I.*

ROZENTUL, M.A., professor; VASIL'YEV, T.V., kand. med. nauk; SOKOLIN, A.I.,  
kand.med.nauk; RAKHMANOVA, N.V., nauchn.sotr.; PRORVICH, L.V., nauchn.  
sotr.; ZLATKINA, A.R., nauchn.sotr.; ARNOL'D, V.A., vrach; PETRUSHEV-  
SKIY, S.I., vrach; PLAVIT, P.Ya., vrach; VELICKHO, E.V., vrach; GLOBUS,  
R.E., vrach; GOL'DENBERG, M.M., vrach; TUNGUSKOVA, A.I., vrach

Results of treating syphilis according to the 1949-1951 programs. Vest.  
ven. i dermat. no.1:22-25 Ja-F '55. (MIRA 8:4)

1. Bol'nitsa im. Korolenko (for Arnol'd, Petrushevskiy) 2. 1-y i 2-y  
kozhno-venerologicheskiye dispansery (for Plavit, Velichko, Globus,  
Gol'denberg, Tunguskova) 3. Iz otdela sifilidologii (zaveduyushchiy  
professor M.A.Rozentul) Tsentral'nogo kozhno-venerologicheskogo insti-  
tuta (direktor - kandidat meditsinskikh nauk N.M.Turanov) Ministerstva  
zdravookhraneniya SSSR.

(SYPHILIS, therapy  
in Russia, pattern of ther.)

ROZENTUL, M.A., prof.; VASIL'YEV, T.V., kand.med.nauk; MASLOV, P.Ye., kand.med. nauk; ROBUSTOV, G.V., kand.med.nauk; SOKOLIN, A.I., kand.med.nauk; RAKHMANOVA, N.V., nauchnyy sotrudnik; KHAMAGANOVA, A.V., nauchnyy sotrudnik; PETRUSHEVSKIY, S.I., vrach; TUNGUSKOVA, A.P., vrach; VELICHKO, E.V., vrach; GLOBUS, R.E., vrach; GOL'DENBERG, M.M., vrach.

Combined treatment of syphilis with several antibiotics [with summary in English]. Vest.derm. i ven. 32 no.1:42-47 Ja-F '58.

(MIRA 11:4)

1. Iz otdela sifilidologii (zav.-prof. M.A.Rozentul) Tsentral'nogo kozhno-venerologicheskogo instituta (dir.-kandidat meditsinskikh nauk N.M.Turanov) Ministerstva zdravookhraneniya RSFSR. 2. Bol'nitsa imeni Korolenko (for Petrushevskiy)

(SYPHILIS, ther.

antibiotics in combination (Rus)

(ANTIBIOTICS, ther. use

syphilis, combined antibiotics (Rus)



REPP, K.Yu., inzh.; TUNGUSKOVA, E.A., inzh.; FYASTOLOV, A.V., inzh.;  
SHALAKHIN, K.S., kand.tekhn.nauk

Relative durability of cements subjected to the corrosive  
influence of copper pyrite mines in the Urals. Shakht.  
stroi. 5 no. 1:17-19 Ja '61. (MIRA 14:2)

1. Ural'skiy nauchno-issledovatel'skiy i proyektnyy institut  
mednoy promyshlennosti.  
(Cement--Corrosion) (Pyrites)  
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made with siliceous cements. Trudy Ural. politekh. inst.  
no.118:44-51 '62. (MIRA 16:6)

(Mortar--Testing)  
(Concrete--Testing)

MISHCHENKO, K.P.; TUNGUSOV, V.P.

New method of calibrating a semiconductor resistance thermometer  
for the determination of the heat capacity of pure liquids and  
solutions. Zhur. prikl. khim. 37 no.6:1243-1247 Je '64.

(MIRA 18:3)

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Thermochemistry of nonaqueous electrolyte solutions. Part 1: Heats of dissolution in ethylene glycol of NaI at 25 and 2.5° and of KI at 25°. Teoret. i eksper. khim. 1 no.1:55-59 Ja-F '65. (MIRA 18:7)

1. Leningradskiy tekhnologicheskii institut tsellyulozno-bumazhnoy promyshlennosti.

TUNIA, H., dr inz.

"Circuit theory in rectifier engineering" by T. Wasserrab. Reviewed  
by H. Tunia. Przegl elektrotech 38 no.11:477-478 '62.

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P/021/61/000/012/001/001  
D223/D304

9.4/20

AUTHOR:

Tunia, Henryk

TITLE:

New electronic circuits for pulse control of thyatron ignition

PERIODICAL: Przegląd elektrotechniczny, No. 12, 1961, 506-508

TEXT: The best results in the problem of using electronic elements in pulse methods for thyatron ignition control are obtained by using exponential pulses shaped from a sinusoidal wave which is phase-shifted by a phase-shifting bridge using variable inductance. The author has worked out two valve circuits for the pulse thyatron control in multiphase circuits, based on gating circuits. In one circuit the change of ignition angle is obtained with one phase-shifting bridge with variable inductance. In the second an electronic control element is used. Both circuits (of which wiring diagrams are given) use

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New electronic circuits ...

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ECC81 valves. Transformers are used at the output of the control circuits to isolate the thyratrons; they also serve as differentiating elements. The experiments made by the author showed that the steep slope of current increase in the circuit fed by thyratrons affects the input circuits of gating elements through grid transformers and inter-electrode capacities of valves, and as a result a circuit loses synchronization. When the circuit which is fed is inductive, the slope of the current increase is reduced, and so the sensitivity of the circuit to noise is reduced. The introduction of integrating elements in the gate input circuit eliminates completely the action of working the current on the control circuit, but the quality of control is not affected. The models of the electronic pulse circuits for thyatron control discussed above were built in the Department of Power of the Institute of Electrotechnics and have been used for two years for speed control of a d.c.

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motor drive. From the point of view of reliability, range of regulation, its quality and small dimensions, the results obtained are, in the author's opinion, very good and offer the best solution realized up to now. In the final design the valve circuits for the separate phases are very similar, hence simplicity of installation. By the introduction of positive polarising voltages in the input circuits of the gating elements and large anode resistances in comparison with the internal resistances of the valves these circuits are not affected by valve ageing. There are 4 figures.

ASSOCIATION: Politechnika warszawska (Warsaw Politechnik)

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TUNIA, Henryk, dr inż.

(1)

Transistor system for the control of the firing of mercury rectifiers. Przegl elektrotech 38 no.10:448 0 '62.

1. Zakład Zautomatyzowanych Napędów, Instytut Elektrotechniki, Warszawa.

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9.2150 (1331, 1462, 1020)

AUTHOR: Tunia, Henryk, Doctor of Engineering

TITLE: Magnetic element for pulse control <sup>h</sup>tyratrons

PERIODICAL: Przegląd elektrotechniczny, v. 37, no. 9, 381 - 385

TEXT: The design and performance of a RL phase shifting circuit with peaking transformer for tyatron grid control is described. A theoretical analysis of the circuit is made in order to explain its unstable behavior and the presence of oscillations in the output voltage wave which, according to the author, have not as yet been reported in literature. After a review of the main design features of peaking transformers the author applies theoretical treatment to the circuit of Fig. 3 and derives the vector diagram shown in Fig. 4. For the phase shifting circuit as shown in Fig. 3, if loaded by the peaking transformer of impedance  $Z_o = R_o + jX_o$ , the output voltage  $U_o$  is given by

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Magnetic element for ...

$$\hat{U}_0 = \frac{\hat{A} + \hat{B}}{\hat{C} + \hat{D}} = \hat{U} \frac{[R \cdot R_0 + jR \cdot X_0] + [X_0 \cdot k - jR_0 \cdot k] \cdot X_d}{[R \cdot R_0 + jR \cdot X_0] + [-X_0 + j(R_0 + R)] \cdot X_d} \quad (6)$$

From this it follows that the locus of  $\hat{U}_0$  is a circle with the center displaced from the origin by the quantity

$$\hat{\mu} = X_{\mu} + jY_{\mu} = \frac{1}{2} \hat{U} \frac{[R_0^2 + X_0^2] \cdot [1 - k] + R_0 R + jX_0 R}{R_0^2 + X_0^2 + RR_0} \quad (10)$$

Since displacement of the locus center affects the phase angle  $\theta$ , the two components of vector  $\mu$  are separately compensated, the imaginary component by connecting capacitance  $C = 1/\omega X_0$ , and the real component by providing assymmetrical voltage  $\hat{U}$  and  $k\hat{U}$ . Under these conditions

$$\hat{U}_0 = U \frac{R_z}{R_z + 2R} e^{-j\theta} \quad (15)$$

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Magnetic element for ...

$$\text{and } \theta = 2 \tan^{-1} \frac{X_d}{R_z + R_d} \quad (16)$$

where  $R_z = R QX_o / R + QX_o$ . In practice full compensation is rarely realized. This fact together with the non-linearity of the magnetic circuits produces voltage fluctuations across the terminals of the peaking transformer and consequent detuning of the LC resonant circuit, with the result that the angle  $\theta$  cannot be kept constant. For this reason mainly, the author concludes that the present control circuit is not suitable for servosystems and can be used only for systems where no high quality control is required. Some reduction of the non-linear magnetic effect can be achieved by reducing design flux density, increasing the core air gap and using magnetic materials with approximately linear B-H characteristics. Laboratory investigations on an experimental phase shifting circuit led to the following conclusions: 1) The circuit is very sensitive to changes in the supply voltage; 2) control characteristics are non-linear; 3) the under-compensated circuit provides an insufficient range of phase angle control; 4) the over-compensated circuit has an increased range of phase angle control due to

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