SHEMASTINA, E.V.

Effect of rubber structure on the diffusion of inhibitor.
A. S. Kuz'minskii, S. A. Reitlinger, and E. V. Shemastina.
Colloid J. (U.S.S.R.) 18, 701-7(1956)(English translation).
—See C.A. 51, 6201f.

B. M. R.

Shemastina, E. V.

Effect of the rubber structure on the diffusion of inhibitor. A. S. Kuz'minskii, S. A. Reitlinger, and E. V. Shemastina (Sci. Research Inst. Rubber Ind., Moscow). *Kolloid. Zhur.* 18, 707–10(1956); cf. *C.A.* 49, 9315b.—A plate of a synthetic vulcanizate contg. 2% 2-$C_{10}H_7$NHPh (I) was pressed in N_2 atm. against another synthetic vulcanizate (contg. x% S in addn. to ZnO 2, stearic acid 2, $(PhNH)_2C$:NH 1%), and the amt. of I in the 2nd plate was detd. from time to time. The diffusion coeff. D of I, calcd. from these data, decreased from 2×10^{-8} to 2×10^{-9} sq. cm./sec. when x increased from 0 to 8% and the equil. modulus from 5 to 36 kg./sq. cm., all at 20°. At 80°, D was approx. 2×10^{-7} and depended little on x. Addn. of 60% chalk lowered D, and addn. of 60% gas black to rubber lowered D even more (e.g., by a factor of 2), but had no effect on the temp. coeff. of D. The energy of activation of diffusion increased with x.   J. J. Bikerman

3

DALIN, Mark Aleksandrovich; MARKOSOV, Petr Ivanovich; SHENDEROVA, Roza
        Isaakovna; PROKOV'YEVA, Tat'yana Vladimirovna; SHEMASTINA, Ye.V.
        red.; SHPAK, Ye.G., tekhn.red.

        [Alkylation of benzene by olefins] Alkilirovanie benzola olefinami.
        Moskva, Gos.nauchno-tekhn.izd-vo khim.lit-ry, 1957. 117 p.
                (Olefins)   (Alkylation) (Benzene)   (MIRA 11:2)

BOGOSLOVSKIY, B.M.; KAZAKOVA, Z.S.; FABRICHNYY, B.P., redaktor;
SHEMASTINA, Ye.V., redaktor; LYR'YE, M.S., tekhnicheskiy redaktor.

[Skeleton catalysts, their characteristics and use in organic
chemistry] Skeletnye katalizatory, ikh svoistva i primenenie
v organicheskoi khimii. Moskva, Gos.nauchno-tekhn.izd-vo khim.
lit-ry, 1957. 143 p.   (MIRA 10:11)

(Catalysts)

SHEMASTINA, E. V.

Effect of nitric acid on polymers. A. S. Kuz'minskiĭ and E. V. Shemastina. Zhur. Priklad. Khim. 30, 433-8 (1957); cf. C.A. 51, 6182i.—Films, 100 μ thick, of butadiene polymer with 30 and 60% double bonds in the principal chain and of polyisobutylenes of different mol. wts. were treated with 55 and 97% HNO_3 at 70-100°. Increasing the percentage of double bonds increased the reactivity of the polymers; increasing the mol. wt. did not affect the rate of oxidation appreciably but increased the rate of decompn. The products contained combined N, and CO_2 was evolved. Deep structural changes occurred in the butadiene polymer, and much CO_2 was produced on decompn. The polyiso-butylenes decompd. at 50°, but deep rupture with the evo-lution of CO_2 occurred only with 97% HNO_3 at 70 and at 100°.   J. Bencowitz

YASHUNSKAYA, Felitsiya Iosifovna; ZITSER, A.I., red.; SHEMASTINA, Ye.V.,
    red.; LUR'YE, M.S., tekhn.red.

[Synthetic rubber and its use in the national econo.] Sinteti-
cheskii kauchuk i ego primenenie v narodnom khoziaistve. Moskva,
Gos.nauchno-tekhn.izd-vo khim.lit-ry, 1958. 78 p.   (MIRA 12:2)
                    (Rubber, Synthetic)

SHEMATONOV, M., inzh.

Planning and building cities of the Kazakh .S.S.R. Zhil.stroi.
no.4:3-5 Ap '60.   (MIRA 13:8)
          (Kazakhstan—City planning)

SHEMATONOV, M.G., inzh.

KPM- timber setter. Shakht. stroi. no.P:18-19 Ag '58.

(MIRA 11:9)

(Mine timbering--Equipment and supplies)

SHEMATOHOV, M.G., inzh.

Device for setting support segments. Shakht. stroi. no.10:
18-19 '58.   (MIRA 11:11)
            (Mine timbering--Equipment and supplies)

An intense light source for photographic purposes
V. A. Fabrikant and A. M. Sluruck. J. Tech. Phys.
(U. S. S. R.) 4, 661-6(1934).— A flash lamp consisting of
Al foil in an atm of O and giving 400,000 candle power
is described. Addn. of 2% Mn raises this to 500,000
candle power. The duration of the flash is, resp., 0.02
to 0.04 and 0.01 to 0.02 sec.
F. H. Rathmann

SHEMAEV, A. M.

Electron-microscopic study of the surface of electrodes in a glow discharge. A. M. Shemaev, A. I. Frimer, and I. I. Sil'vestrovich. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 15, 413-17(1951).—Sheet electrodes of Ni, Ag, Ta, Mo, and W were sealed in discharge tubes 25–30 mm. outside diameter, 120 mm. long, filled with Ne of 600 µ pressure, and operated on 3–5 kv. a.c or d.c. The tubes operated on the pump (at constant pressure) or were sealed off the pump and cleaned up (variable pressure). Ta, for example on a d.-c. supply, cleaned the gas up entirely in 1 hr. Electron micrographs show that low-melting materials such as Ni on a.c. and at constant pressure give surfaces covered with a no. of cones and traces of melting which later go over into a large, par-

tially molten structure. On d.c. the structure with molten cones is enhanced. In refractory metals the cathodes are etched and the cubical structure appears. At variable pressure the etching effect appears also on Ni without traces of melting. Islands of insulating material enhance the effects considerably because of local high-field-strength regions. Etching at variable gas pressure is recommended for metallographic studies in preference to chem. etching.   S. P.

SHEMAYEV, A. M.

USSR/Electronics - Gas Absorption   Feb 52

"Absorption of Inert Gas and Fusion of the Cathode
Surface in a Glowing Discharge," A. M. Shemayev,
I. I. Papenova, I. S. Royzman (Deceased)

"Zhur Tekh Fiz" Vol XXII, No 2, pp 203-215

Vanishing of inert gas during low pressure glowing
discharge is considered as capture of gas by so-
lidifying metallic drops on cathode and glass bulb.
Formation of these drops is produced by short-lived
micro-arcs on cathodic surface, resulting in local
melting of even high-melting metals. Tests of gas
absorption were performed in tubes with cathodes of
W, Mo, Ta, Ni, Cu, Al, Zn, Sn, and graphite. Re-
ceived 23 Apr 51.   209T57

FOTIN, V.P.; AKOPYAN, A.A.,red.; ANDRIANOV, K.A.,red.; BIRYUKOV, V.G.,glavnyy
        red.; BUTKEVICH, Yu.V.,zamestitel' glavnogo red.; GRANOVSKIY, V.L.,
        red.; KALITVYANSKIY, V.I.,red.; KLYARFEL'D, B.N.,red.; KRAPIVIN, V.K.,
        red.; TIMOFEYEV, P.V.,red.; PASTOVSKIY, V.G.,red.; TSEYROV, Ye.M.,
        red.; SHEMAYEV, A.M.,red.; DEMKOV, Ye.D.,red.; FRIDKIN, A.M.,tekhn.
        red.

        [Voltage increase on long a.c. lines during nonsymmetric short
        circuits to ground] Povysheniia napriazhenii v dlinnykh liniiakh
        peremennogo toka pri nesimmetrichnykh korotkikh zamykaniiakh na
        zemliu. Moskva, Gos.energ.izd-vo, 1958. 223 p. (Moscow. Vsesoiuznyi
        elektrotekhnicheskii institut. Trudy, no.64)   (MIRA 12:2)
                    (Electric lines)   (Short circuits)

SOKOLOV, Nikolay Nikolayevich; ANDRIANOV, K.A.,red.; AKOPYAN, A.A.,red.;
    BIRYUKOV, V.G.,glavnyy red.; BUTKEVICH, G.V.,red.; GRANOVSKIY, V.L.red.;
    GERTSENBERG, G.R.,red.; ZABYRINA, K.I.,red.; KALITVYANSKIY, V.I.,red.;
    KLYARFEL'D, B.N.; SAKOVICH, A.A.; TIMOFEYEV, P.V.; PASTOVSKIY, V.G.;
    TSEYROV, Ye.M.; FRIDMAN, A.Ya.; SHEMAYEV, A.M.; TIMOKHINA, V.I.,red.

[Methods for the synthesis of organopolysiloxanes] Metody
sinteze poliorganosiloksanov. Moskva, Gos.energ. izd-vo. 1959.
198 p. (Moscow. Vsesoiuznyi elektrotekhnicheskii institut.
Trudy, no.66)   (MIRA 12:5)
                    (Siloxanes)

L 38?00-?6   ' :(1)

ACC NR: AP6029724   SOURCE CODE: UR/0109/66/011/005/0966/0967

AUTHOR: Zernov, D. V.; Timofeyev, P. V.; Fursov, V. S.; Migulin, V. V.; Spivak, G. V.; Spasskiy, B. I.; Nilender, R. A.; Grozdover, S. D.; Shemayev, A. M.; Solntsev, G. S.; Kuzovnikov, A. A.; Zaytsev, A. A.; Vasil'yeva, M. Ya.; Mitsuk, V. Ye.; Dubinina, Ye. M.; Zheludeva, G. A.

ORG: none

TITLE: Nikolay Aleksandrovich Kaptsov

SOURCE: Radiotekhnika i elektronika, v. 11, no. 5, 1966, 966-967

TOPIC TAGS: electric engineering personnel, magnetron, klystron, corona discharge, gas conduction, gas discharge plasma

ABSTRACT: N. A. Kaptsov passed away 10 February 1966. He was a student of the famous P. N. Lebedev, and performed many fundamental investigations in the development of modern electronics. He was the creator and leader of the chair of electronics of Moscow State University. He developed the concept of phase grouping of electrons. His ideas are the basis for the development of the magnetron and klystron. He developed the concept explaining the phenomenon of corona discharge. He also developed ideas connected with formation of gas conduction and phenomena in a gaseous-discharge plasma. Kaptsov served for years as the head of the physical laboratory and consultant to the Moscow Electron Tube Plant. He was the author of numerous books, including "Physical Phenomena in Vacuum and in Gases, which was translated into foreign languages; he also created and taught numerous electronics courses. [JPRS: 36,501]

SUB CODE: 05, 09 / SUBM DATE: none

Card 1/1

0918   0203

LYAPIDEVSKIY, S.S.; SHEMBEL', A.G.

Stammering. Med.sestra 18 no.9:30-35 S '59.   (MIRA 12:11)

1. Iz Gosudarstvennogo nauchno-issledovatels'kogo instituta
ukha, gorla i nosa Ministerstva zdravookhraneniya RSFSR, Moskva.
(STAMMERING)

SHEMBEL, B.K.

5A   Boris Konstantinovich   B 66

G

2786. Equivalent Impedance of the Non-linear Element of a Linear System. B. K. Shembel. / Tekhn. Phys. U.S.S.R. 9 6 pp 514 521, 1939 In Russian. - As known, the method of calculating circuits containing non-linear elements consists in replacing these elements by an equivalent ohmic resistance. Difficulties arise only in such cases where the non-linear elements are inserted into a circuit in which a transformation of frequencies occurs. The element in question, then, has to be represented by a complex resistance. It is shown that the problem may be solved by the development of the steady and universal function $f = f(v)$ in a Fourier series; this method holds good for simple as well as for coupled oscillatory circuits. The formulae developed are simple and the theoretical apparatus does not go beyond the usual. It is shown, furthermore, that the effective resistance of a circuit containing non-linear elements exceeds that without such elements, and that the phase of the average slope in a valve generator may surpass by several times the phase shift of the grid circuit owing to the grid current.   F. B. K.

METALLURGICAL LITERATURE CLASSIFICATION

SHENGEL, B. K.

SA

β 66
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2796. Deviation of the Valve Generator Oscillations from the Natural Frequency of the Linear Circuit. B. K. Shengel. *J. Tech. Phys.* U.S.S.R. 9. 7. *pp.* 868-880, 1939. *In Russian.*—The calculation of the deviation of the frequency of a valve generator is carried through following the method of the reactive powers and using an equivalent scheme. The grid current is taken into account. An expression for the phase of the average steepness is obtained and found to consist of three components, due to the influence of the anodic circuit, influence of the grid circuit, and the reciprocal influence of the anodic and grid circuit, respectively. As to its absolute magnitude the phase of the average slope always exceeds the impressed phase of the coefficient of the reaction coupling. The formulae for the falling-out of the frequency are given for Meissner's, Kolpitz's, and Hartley's circuits, for generators without and with grid current. For the generator with grid current the deviation of frequency is chiefly depending on the grid circuit. The formulae obtained for the generator without grid current differ from those due to previous authors.   F. B. K.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

HENDEL, I. K.

Synchronization of a valve oscillator by a harmonic of the fundamental frequency. TEMORZHEVSKL, O. A., AND SHIMMEL, B. K. *J. Tech. Phys.*, *USSR*, 17 (No. 2) 215-30 (1947) *In Russian.*—A valve oscillator with complex load is considered as a non-linear resistance in a generalised network which is treated as a reactive power generator. Theoretical analysis agrees well with experiments on a 6J7 oscillator locked by the 9th and 10th harmonic. The band-width of the locking frequency zone is ∝ the amplitude of the synchronizing signal, the order of the harmonic and the impedance of the tuned circuit at resonance, but is largely independent of Q.   A. L.

Materials + Subsidiary Techniques

WE.

1:389
Measurement of Equivalent Parameters of Quartz
Crystals by an Oscillation Method.

1548

SHEMBEL', B.K.; OSTROUMOV, B.A., prof., red.; YANOVSKIY, B.M., prof., otv.red.; DVORAKOVSKAYA, A.A., tekhn.red.

[Studying the equivalent resistance of quartz resonators] Issledovanie ekvivalentnogo soprotivleniia kvartsevogo rezonatora. Leningrad, Izd. VNIIM, 1948. 56 p. (Leningrad, Vsesoiuznyi nauchno-issledovatel'skii institut metrologii. Trudy, no.2) (MIRA 11:10)
                        (Oscillators, Crystal)

SHEMBER, L. K.

219. The problem of objective measurement of crystal oscillator properties. Shember, L. K. Radio-tekhnika, 3 (No. 3) 36-48 (1948) in Russian.—Of the

3 fundamental properties of a crystal oscillator: frequency, temperature coefficient and "activity," the latter is investigated theoretically and experimentally. It is shown to be inversely ∝ the initial dynamic slope of the generator and is fully determined by the equivalent effective resistance and total shunt capacitance of the crystal. A. L.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

SHEMBEL', B. K.

USSR/Physics   Time measurement

Card   :   1/1

Authors   :   Shembel', B. K., Dr. of Tech. Sciences

Title   :   A physical standard of time and frequency

Periodical   :   Priroda, 43/7, 25 - 29, July 1954

Abstract   :   The author refers to the superiority of clocks, based on quartz
                    crystals, which oscillate 10^5--10^6 times a second instead of the
                    usual once-a-second in the case of the pendulum. Quartz clocks
                    have a variation of only 0.0002-0.0001 second in 24 hours. The
                    principle of these clocks is explained. The author next deals with
                    the principles of measuring time by using molecules or atoms as
                    oscillators and he finally elucidates the principles by which
                    frequency and time can be preserved using the spectrum absorption
                    lines in gases. Diagrams; drawings.

Institution   :   ....

Submitted   :   ....

FEDOTOV, A.P.;   SHEMBEL', B.K.

Instrument for the measurement of oscillation phase differences in
the decimeter wave range.   Izm.tekh. no.6:43-45 N-D '55. (MLRA 9:3)
(Radio measurements)

FD-2672

USSR/Electronics - Circuits

Card 1/1   Pub. 90-4/12

Author   : Shembel', B. K., Active Member, VNORiE

Title   : A method for calculation of an oscillator with piezoelectric frequency stabilization

Periodical : Radiotekhnika, 10, 30-45, Jul 55

Abstract   : A simple method for calculation of an oscillator with piezo-electric frequency stabilation, based on the method of successive approximations and taking into account the effects of tube plate reactance and grid current, for oscillator circuits with a resona-tor between the plate and cathode, between grid and cathode, and between plate and grid, was presented in a report at the 2nd All-Union Conference on Piezoelectricity in Moscow on 28 April 1955. A procedure is presented for the calculation of following values: amplitude of electrical oscillations, frequency, piezocurrent, amplitude of mechanical oscillations of crystal, and power dis-sipation in it. Any other types of quartz oscillators having the feedback circuit composed of a series of four-terminal net-works can be reduced to a system equivalent to the types men-tioned. Graphs. Twenty one references: 7 USSR.

Institution : All-Union Scientific and Technical Society of Radio Engineering and Electric Communications imeni A. S. Popov (VNORiE)

Submitted   : February 23, 1955

Some considerations on the operation
of high current linear accelerators

High-current High Energy Accelerators and
Ion Injectors

Several High Energy...
in the ...

I-5

Category : USSR/Radiophysics - Radiation of Radio Waves. Antennas

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4528

Author   : Teplyakov, V.A., Shembel', B.K.
Title   : Equation for the Frequency of a Toroidal Resonator

Orig Pub : Radiotekhn. i elektronika, 1956, 1, No 4, 443-446

Abstract : Measurement results are used to obtain a simple empirical equation
           for the calculation of the resonant wavelength λ of a toroidal re-
           sonator, the error being not more than 5%: $\lambda = 1.31\ D\ (1 + \Delta\ )$,
           where D is the diameter of the resonator, and $\Delta = 0.64 -1.7\ b/n +$
           $2.11\ \log\left(\frac{2d+h}{D}\right)$. Here b is the distance between the bottom and the
           rod of the cavity, h the length of the cavity, and d the diameter of
           the rod. The equation is valid for $\Delta \leq 0.8$ and $d/D < 0.1$.

Card   : 1/1

SHEMBEL', B. K.

621.373.421.14 : 621.371.413   2702
    Excitation of Oscillations in a High-Q
Cavity Resonator by an Oscillator.
A. P. Fedotov & B. K. Shembel'. (Radio-
tekhnika i Elektronika, Dec. 1956, Vol. 1,
No. 12, pp. 1474–1477.) A calculation of an
antiparasitic ('quenching') resistor in the
line connecting the oscillator with the high-Q
cavity resonator is presented.

SOV/109-3-9-14/20

AUTHORS: Frenkel, L. M., Shembel', B. K.

TITLE: The Equivalent Circuit and the Parameters of a Cylindrical Toroidal Resonator (Skhema zameshcheniya i parametry tsilindricheskogo toroidal'nogo rezonatora)

PERIODICAL: Radiotekhnika i elektronika, 1958, Vol 3, Nr 9, 1211-1215 (USSR)

ABSTRACT: The complex resonator, such as shown in Fig.1 (p 1213) can be represented by   an equivalent parallel circuit or a series circuit. However, the calculation of the equivalent parameters presents a number of prac- tical difficulties, since the mathematics is very in- volved. The problem of determining the equivalent para- meters was solved by the author in the following manner. First, a simple, regular resonator is considered; the parameters of this can easily be calculated. The resona- tor is then "deformed" in the required manner and this results in a change of its resonant wavelength (detuning). If the detuning is less than 25%, the parameters of tne equivalent circuit can be determined with an accuracy of ± 5% from the graph of Fig.3. These give the values of the correction coefficients .   The parameters of the

Card 1/2

SOV/109-3-3-14/20

The Equivalent Circuit and the Parameters of a Cylindrical
Toroidal Resonator

resonator are now found by calculating the parameters of
the original simple resonator and by multiplying these by
appropriate correction factors (see Fig.4). The paper
contains 4 figures and 7 references; 6 of the references
are Soviet (1 is translated from English) and 1 is English.

SUBMITTED: February 25, 1957.

Card 2/2

S/142/60/000/003/007/017
E192/E482

AUTHORS: Fedotov, A.P. and Shembel', B.K.

TITLE: Preliminary Excitation of the Resonator of a Linear
              Accelerator Which is Fed from Oscillators

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika,
              1960, No.3, pp.350-358

TEXT: Many linear accelerators of heavy particles consist of a
high-Q resonator which is fed from a group of oscillators through
short sections of transmission lines.   However, a system of this
type can operate at many frequencies.   Consequently, for the
purpose of obtaining stable oscillations in the resonator, a
quenching resistance is included in the transmission line (Ref.1 and
2), but a large portion of the oscillator power is lost in this
resistance.   The losses can be reduced by using the pre-excitation
of the accelerator, this being done by means of an auxiliary
oscillator at the principal oscillation mode.   The problem of
feeding the accelerators is analysed in detail.   The system can be
represented by the equivalent circuit shown in Fig.1 where an
oscillator is represented by parameters ε and R_1.   It is

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Preliminary Excitation of the Resonator of a Linear Accelerator
Which is Fed from Oscillators

assumed that the natural frequencies of the resonator and of the
tuned circuit of the oscillator are equal (f_0) and that the
transmission line of length ℓ is lossless. The coupling between
the transmission line and the resonator of the accelerator is
characterized by

$$\sigma = \frac{G_0}{G_p/n^2}$$

where G_0 is the wave admittance of the line, G_p is the
equivalent to the resonator and $1/n$ is the transformation ratio
for the input of the resonator. The coupling between the line and
the resonant circuit of the oscillator is defined by

$$\eta_0 = \frac{m^2 G_0}{m^2 G_0 + G_K}$$

where one of m is the transformation ratio for the energy input.

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S/142/60/000/003/007/017
E192/E482

Preliminary Excitation of the Resonator of a Linear Accelerator
Which is Fed from Oscillators

The efficiency of the whole system η is defined as the ratio of
the power in the resonator and the circuit of the oscillator. The
system is further characterized by the stabilization coefficient for
the oscillator which is equal to the ratio of the frequency change
due to the influence of various effects in the absence of an
external circuit to the frequency change due to the same parameters
in the presence of the external circuit. The stabilization
coefficient is defined by

$$K_c = 1 + \frac{\frac{dB_B}{d\varepsilon}}{\frac{dB_K}{d\varepsilon}} \qquad (3)$$

where B_K is the susceptance of the resonant circuit, B_B is the
susceptance and δ is the detuning of the system from f_0. If the
quenching conductance G_f in the system is represented by Fig.1,
a single-frequency system is obtained for $G_f = 0$. When $\ell = k\lambda/2$,
Card 3/7

S/142/60/000/003/007/017
E192/E482

Preliminary Excitation of the Resonator of a Linear Accelerator
Which is Fed from Oscillators

B_B is expressed by Eq.(5), where Q_K is the quality factor of the
resonant circuit of the oscillator without load and Q_p is the
quality factor of the resonator without load. B_K is expressed by
Eq.(7) so that the full susceptance at points k/k of Fig.1 is
given by Eq.(7). The stabilization coefficient is therefore given
by Eq.(8). If the length of the line is $\ell = (2k + 1) \lambda_0/4$, the
stabilization coefficient is expressed by Eq.(9). From Eq.(8) and
(9) it is seen that at f_0, the stabilization coefficient is greater
than unity for $\ell = k\lambda/2$ and less than unity for $\ell = (2k + 1)\lambda/4$.
Thus, in the first case the external circuit has a stabilizing
effect on the oscillator, whilst in the second case it destabilizes
the system. Instead of the oscillator it is possible to use a
resonant amplifier with an independent drive. This can be coupled
fairly strongly with the resonator of the accelerator. Now the
remaining oscillators can be operated at the required frequency
which is determined by the amplifier (pre-exciter). This feeding
system is analysed in some detail and the results are illustrated

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Preliminary Excitation of the Resonator of a Linear Accelerator
Which is Fed from Oscillators

in Fig.3. This shows the change of the input conductance of the
pre-exciter line as a function of the coupling coefficient between
the line and the resonator. It is seen that it is possible to
choose such a coupling coefficient between the pre-exciter line and
the resonator that the change of the input conductance in the line
is comparatively small when the oscillators are connected to the
system. When a quenching resistance is used in the system,
$(G_F \neq 0)$ is present, the susceptance of the external circuit at
point k/k of Fig.1 is given by Eq.(10) where $2p = 2\pi(\ell_0/\lambda)$ and
$g_F = (G_F)/(G_0)$. By analysing this expression together with the
expression for B_K, it is found that with a high Q_p and a short
transmission line it is nearly always possible to make the system
operate at a single frequency. The resonance of
the system of Fig.1 is achieved when $B_B = -B_K$. Graphically the
resonance can be determined by the point of intersection by the
curves representing Eq.(6) and (10). It is of interest to
determine the pull-in bandwidth of the oscillator which operates

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S/142/60/000/003/007/017
E192/E482

Preliminary Excitation of the Resonator of a Linear Accelerator
Which is Fed from Oscillators

with the quenching resistance.   The pull-in bandwidth for a
single-frequency is defined as a range of the oscillation frequency
which lies inside the passband of the resonator ($1/2 \ Q_p$).   The
pull-in bandwidth is given by Eq.(11), provided the stabilization
coefficient of the system is greater than a certain limiting value.
The pull-in bandwidth was investigated experimentally and the
results are illustrated in Fig.5.   From the curves of Fig.5, it is
seen that the measured pull-in bandwidth was $0.15/Q_K$ while the
calculated bandwidth for this case was $0.27/Q_K$.   The operation of
a pre-exciter oscillator with a quenching resistance and an
oscillator was investigated experimentally.   The power supplied by
the pre-exciter was 7 W and that of the oscillator was 11.2 W.
The coupling lines for each system were the same.   It was found
that a stable oscillation was possible when the power received by
the resonator was 15 W and the power dissipated in the quenching
resistance was 2.4 W.   It is concluded therefore that this system
has some advantages in comparison with the method based on a

Card 6/7

S/142/60/000/003/007/017
E192/E482

Preliminary Excitation of the Resonato. of a Linear Accelerator
Which is Fed from Oscillators

pre-exciter using a resonance amplifier with an independent drive.
V.V.Polyakov and V.G Sud'yev helped in the experimental work
described in the article.   Various methods of pre-excitation were
discussed with L.I.Bolotin. V.M.Ovsyannikov, V.I.Volkov and others.
There are 5 figures and 8 references: 4 Soviet and 4 non-Soviet (one
of which is translated into Russian).

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR
             (Institute of Physical Chemistry AS USSR)

SUBMITTED: May 15, 1959 (to NDVSh - Radiotekhnika i elektronika)
            February 4, 1960 (to IVUZ - Radiotekhnika)

Card 7/7

20696
S/120/61/000/001/034/062
E192/E382

9.2310 (also 2604, 1130)

AUTHORS: Prokunin, L.M. and Shembel', B.K.

TITLE: Electric-field Distribution Along the Axis of a
            Toroidal Resonator

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No. 1,
            pp. 109 - 111

TEXT: A cylindrical toroidal resonator (Fig. 1) has many
applications in radio engineering, and in practice it is necessary
to know the distribution of the electric field along its axis.
The calculation of the field is difficult and it is necessary
to resort to measurements. In the following, a method of
measurement based on detuning is described. The method is based
on the relationship:

$$/ f_i f = - (1/2) \triangle W/W \qquad (1)$$

which relates the deviation of the natural oscillation
frequency of the resonator to the changes of the energy stored
in the system. In the measurement of the field along the axis,

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S/120/61/000/001/034/062
E192/E382

Electric-field ....

it is possible to deform the field by means of a small
dielectric sphere. Eq. (1) can then be written as (Ref. 7):

$$\frac{\Delta f}{f} = \frac{v}{V} \frac{\varepsilon - 1}{\varepsilon + 2} \frac{E_o^2}{\overline{E^2}} \qquad (2)$$

where v is the colume of the sphere,
       V is the volume of the resonator,
       E_o is the field at the point of measurement,
       $\overline{E^2}$ is the mean square electric field over the resonator.

The resonator is excited by a suitable input loop for the
measurements and its frequency deviation is determined indirectly
by means of a crystal rectifier circuit. The frequency
deviation is given by:

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Electric-field ....

$$\wedge f = (f/2Q) \sqrt{(I_p/I)^2 - 1} \quad \text{for} \quad \triangle f/f \ll 1$$

where I_p is the detector current at the resonant frequency,

1 is the current at a given deviation, and

Q is the quality factor of the resonator.

The perturbing sphere has a diameter of 2 mm and is made of paraffin; it is suspended on a fine filament having a diameter of 1-3 μ. The detector could be used to determine the relative frequency displacement of the resonator by taking the resonance curves for various positions of the sphere. It was then possible to calculate the field. In this way, the fields were determined for various parameters h, r, b and d of the resonator (Fig. 1). The external diameter of the resonator was $D = 360$ mm and the inner diameter of the internal tube was $d_o = 10$ mm. The potential difference along the resonator axis was also measured. In this case, the resonator was fitted with an additional probe. A series of

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Electric-field ....

normalised curves corresponding to   d = 30 mm is shown in
Fig. 3; U in the figure denotes the potential difference
between the ends of the resonator and h is its height. The
other parameters for the curves of Fig. 3 are indicated in
the table:

Curve	h/b	2 h, mm	Curve	h/b	2 h, mm
1	9	45	5	4.7	102
2	7.7	58	6	4.0	120
3	6.3	71	7	3.4	141
4	5.4	86	8	3.0	165 .

The field distribution in the resonator was also checked by
means of an electrolytic tank and it was found that the curves
thus obtained were in good agreement with those of Fig. 3. All
the above experiments are valid only if the following conditions
are fulfilled: $d/D \leqslant 0.1$ and $h/b \geqslant 4$. There are 5 figures,
2 tables and 12 references: 2 Soviet and 10 non-Soviet.

Card 4/5

9,4200 (also 1163)

21434
S/109/61/006/001/013/023
E140/E163

AUTHORS: Fedotov, A.P., and Shembel', B.K.

TITLE: Linear accelerator resonator as a load for
              high-frequency oscillators

PERIODICAL: Radiotekhnika i elektronika, Vol.6, No.1, 1961,
              pp. 108-116

TEXT: In linear standing wave accelerators heavily loaded by
the beam of accelerated particles, the latter affects the
amplitude and phase of the accelerating field in the resonator and
the impedance presented to the high-frequency power supply.   On
the other hand, the amplitude and phase of the accelerating field
determine capture of the particles in the resonator and thus the
current in the accelerated particle beam.   Interactions between the
generator and the resonator are very strong and it has been
proposed that at high beam loading the generator-accelerator system
can be unstable.   To investigate this problem the equivalent
circuit of the system is considered.   An experimental model of an
accelerator consisting of a single-gap klystron buncher and a
basic resonator was used.   The apparatus is shown schematically in
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Linear accelerator resonator as a load for high-frequency
oscillators

Fig. 1, where the following notation is used: 1 - electron gun;
2 - buncher; 3 - basic resonator; 4 - energy spectrum analyzer;
5 - field amplitude indicator; 6 - phase meter; 7 - slotted line;
8 - frequency multiplier channel exciter; 9 - power division
bridge; 10 - intermediate generator; 11 - final generator;
12 - phase inverter; 13 - auxiliary generator; 14 - attenuator;
15 - vacuum envelope (steel tube). The model satisfies two
requirements: the power transferred by the basic resonator field
to the beam constitutes a substantial portion of the power fed in
(i.e. the basic resonator of the accelerator has a high efficiency)
and the resonator is "long", i.e. the particles accelerated in it
complete more than a period of oscillation. The equivalent
circuit and the vector diagrams of the accelerator resonator
loaded by the beam are given in Fig. 2. Here ε and R_i are the
generator parameters, I_p is the resonator current, R_3 is the
real component of the unloaded resonator impedance and I_π is
the beam current. The input impedance and stability conditions
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E140/E163

Linear accelerator resonator as a load for high-frequency oscillators

are found.   Acknowledgements are expressed to Yu.K. Solodkov, N.P. Popov, Ye.A. Sidorov, V.B. Stepanov and A.D. Grishin for their participation in the experimental part of the work, and to V.A. Teplyakov and G.M. Anisimov for advice.
There are 6 figures, 1 table and 9 references: 8 Soviet and 1 English.

SUBMITTED: May 3, 1960

Card 3/5

PHASE I BOOK EXPLOITATION   SOV/6234

Karetnikov, D. V., I. N. Slivkov, V. A. Teplyakov, A. P. Fedotov,
    and B. K. Shembel'.

Lineynyye uskoriteli ionov (Linear Ion Accelerators). Moscow,
    Gosatomizdat, 1962. 207 p. Errata slip inserted. 5000 copies
    printed.

Ed.:   A. I. Voronova; Tech. Ed.:   S. M. Popova.

PURPOSE: This book is intended for nuclear physicists and engi-
    neers designing particle accelerators.

COVERAGE: The book contains a systematized explanation of the theory,
    design, and construction of linear ion accelerators. The following
    personalities are mentioned: K. D. Sinel'nikov, N. N. Semenov,
    A. L. Mints, A. I. Akhiyezer, Ya. B. Faynberg, V. V. Vladimirskiy,
    A. S. Kompaneyets, A. D. Vlasov, P. M. Zeydlits, I. L. Zel'manov,

Card 1/7

L 58987-65   EWT(1)/EPA(sp)-2/EPF(c)/EPA(w)-2   Pr-4/Peb   AT,

ACCESSION NR: AP5019021   UR/0286/65/000/012/0044/0045
                                            533.9.07

AUTHOR: Shembel', B. K.; Karetnikov, D. V.

TITLE: An evacuation pumping system for ion sources. Class 21, No. 171944

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 44-45

TOPIC TAGS: ion source, plasma source, vacuum pump

ABSTRACT: This Author's Certificate introduces: 1. An evacuation pumping system for
ion sources. The system contains a plasma source, a chamber for shaping the ion
beam and exhaust pumps. The system is designed for increasing the substance utili-
zation factor (the ratio of the quantity of ionized gas to the total quantity of gas
which is fed into the beam shaping chamber) and for improving the vacuum in the cham-
ber between the plasma source and the beam forming chamber. An auxiliary chamber
is used which is located in a strong longitudinal magnetic field. This auxiliary
chamber has emission apertures along the axis of plasma motion. The vacuum in this
auxiliary chamber is softer than in the plasma source, but harder than in the beam
shaping chamber. 2. A modification of this system in which a source with a direc-
tional plasma stream is used, e.g. a source with a very deep emission zone. 3. A

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ACCESSION NR: AP5019021   0

modification of this system in which a pump is connected to the auxiliary chamber
for pumping out the neutral gas which comes from the plasma source.

ASSOCIATION: none

SUBMITTED: 04Mar61   ENCL: 00   SUB CODE: ME, EM

NO REF SOV: 000   OTHER: 000

Card 2/2

SHEMBEL', V.I.

Some properties of countably-multiple numerical series. Trudy
Vych.tsentra AN Gruz.SSR 2:47-58 '62.   (MIRA 16:1)
                         (Series)

SHEMCHUK, A.S. (Kiyev, ul. Saksaganskogo, d.114, kv.6)

Total bronchospasm during anesthesia. Klin.khir. no.12:67-68 D '62.

(MIRA 16:2)

1. Kiyevskiy nauchno-issledovatel'skiy rentgeno-radiologicheskiy i onkologicheskiy institut.

(SPASMS)   (ANESTHESIA—COMPLICATIONS AND SEQUELAE)

Foreign body in the larynx simulating a malignant tumor. Ioffe, M.Y.,
nauk. i gorl. bol., 24 no.6:85 N-D '62.

1. Iz khirurgicheskoy kliniki Kiev... nauchn.-issledovatel'skogo
...ogo... radio i onkol... institut. (dir. - prof. ...
...rchenko).

SHEMCHUZHIVA, E. A. (Engr.)

The obtaining of pure aluminum by the electrolytic refining of silicon-
aluminum alloys, Metallurgy of Non-Ferrous Metals, Moscow, 1946. Collection
of Scientific Works No. 14, Moscow Inst. of Non-Ferrous Metallurgy.
Report U-3391, 22 April 1953.

L 13424-66   EWT(m)/EWP(j)   RM

ACC NR: AP5028985   SOURCE CODE: UR/0122/65/000/009/0040/0041

AUTHORS: Khil'chevskiy, V. V. (Candidate of technical sciences, Docent); Shemegan,
Yu. M. (Engineer)

ORG: none

TITLE: The effect of a plastic coating on the damping of free vibrations of rods

SOURCE: Vestnik mashinostroyeniya, no. 9, 1965, 40-41

TOPIC TAGS: vibration, vibration measurement, vibration damping, free oscillation,
epoxy resin, epoxy plastic, plastic coating

ABSTRACT: Experiments were performed to determine the effect of plastic coating on
the damping of vibrations in metal rods. The rods were covered on two sides by a
layer of epoxy resin compound D-6 consisting of the following (portions by weight):
epoxy resin ED6 - 100; dibutylphthalate - 11; hexomethylenediamine - 15. This com-
pound was selected for its good adhesion to metals. A diagram of the test specimens
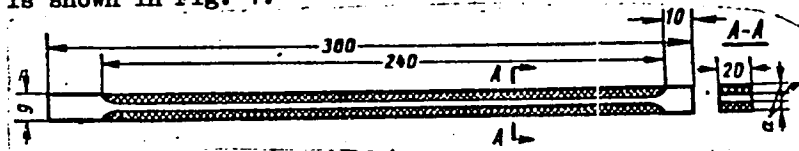is shown in Fig. 1.

Fig. 1. Diagram of the
specimen.

UDC: 621.792.4:620.178.311.6
UDC: 678.5.026:620.178.311.6

Card 1/3

L 13424-66

ACC NR: AP5028985

The resin was applied to the metal and hardened at 70C for one hour, followed by two hours at 20C. The thickness of the covering was varied from 3 mm to 2 and to 1 mm. Recording of vibrations and subsequent mathematical treatment of readings on vibrograms were conducted according to the methods set forth by V. V. Khil'chevskiy (Sb. Trudy nauchno-tekhnicheskogo soveshchaniya po izucheniyu rasseyaniya energii v materiale. Izd-vo AN UkrSSR, 1958). Figure 2 is a plot of the decrement δ as it

Fig. 2. Plot of the variation of the logarithmic decrement with the amplitude of deformation with various cover thickness. 1, 2, 3, 4 - metal specimens with respective cover thicknesses 0, 1, 2, and 3 mm; 5 - plastic specimen.
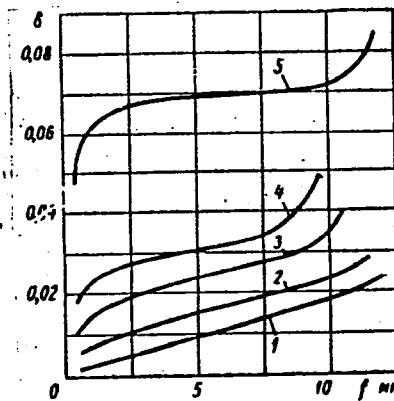
varies with the amplitude of deformation f (end deflection of the specimen). It is noted that the resin covering significantly increases the logarithmic damping

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L 13424-66

ACC NR: AP5028985

decrement. Additional tests were performed to measure the variation of δ with changing values of cover thickness and specimen weight. Orig. art. has: 3 figures.

SUB CODE:20,11/ SUBM DATE: none/ SOV REF: 003

Card 3/3

VOLOSHIN, A.I.; BOGOYAVLENSKIY, K.A.; AKHTYRCHENKO, A.M.; TURIK, I.A.;
ZHIDKO, A.S.; LYALYUK, V.S.; GABAY, L.I.; ONOPRIYENKO, V.P.;
STARSHINOV, B.N.; BABIY, A.A.; SAVELOV, N.I.; Prinimali
uchastiye: TORYANIK, E.I.; VASIL'YEV, Yu.S.; SHEMEL', T.I.;
SENYUTA, V.I.; BONDARENKO, I.P.; AMSTISLAVSKIY, D.M.;
ANDRIANOV, Ye.G.; SERGEYEV, G.N.; ZAMAKHOVSKIY, M.A.;
LYUKIMSON, M.O.; IVONIN, V.K.; TSIMBAL, G.I.; SEN'KO, G.Ye.;
KONAREVA, N.V.; SOLODKIY, Yu.L.; LUKASHOV, G.G.; TARASOV, D.A.;
GORBANEV, Ya.S.; SUPRUN, I.Ye.; TIKHOMIROV, Ye.I.; KONONENKO, P.A.;
PROKOPOV, V.N.; GULYGA, D.V.; PLISKANOVSKIY, S.T.; PONOMAREVA, K.Ye.

Effect of the length of coking on coke quality and the performance
of blast furnaces. Koks i khim. no.12:26-32 '61.
(MIRA 15:2)
1. Ukrainskiy uglekhimicheskiy institut (for Voloshin,
Bogoyavlenskiy, Akhtyrchenko, Turik, Zhidko, Lyalyuk, Toryanik,
Vasil'yev, Shemel'). 2. Zhdanovskiy koksokhimicheskiy zavod
(for Gabay, Senyuta, Bondarenko, Amstislavskiy, Andrianov,
Sergeyev, Zamakhovskiy, Lyukimson, Ivonin, TSimbal). 3. Ural'skiy
nauchno-issledovatel'skiy institut chernykh metallov (for
Onopriyenko, Starshinov, Babiy, Sen'ko, Konareva, Solodkiy).
4. Zavod "Azovstal'" (for Savelov, Lukashov, Tarasov, Gorbanev,
Suprun, Tikhomirov, Kononenko, Prokopov, Gulyga, Pliskanovskiy,
Ponomareva).
(Coke)
(Blast furnaces)

ABSTRACT: An experimental and analytical study is reported with measurements of the axial pump force in a special test rig. An extended pump shaft is driven through a coupling which allows axial freedom. The axial force is resisted by a thrust bearing at the end of a bell-crank by which the force is transmitted to a scale. An analysis of the pressure distribution in the centrifugal pump housing yields an expression (Eq.12), wherein the axial force is proportional to the projected wheel area, the fluid density, the pump head and an experimentally found factor. Expressed in another way, the axial force is proportional to the square of the speed, the fourth power of the diameter and the density; alternatively to the square of the diameter, the head and the density. Experimental curves showing the measured axial force plotted against the square of the pump rpm are straight lines. All the lines for different

Card 1/2

The Experimental Determination of the Axial Forces in Centrifugal
Pumps

SOV/122-58-6-4/37

pump deliveries converge at zero speed to a positive axial
force which is a correction term. Measured and predicted
axial forces plotted against delivery differ by about 10%.
There are 3 figures, 1 table.

1. Centrifugal pumps--Analysis   2. Shafts--Torque   3. Centrifugal

Card 2/2   pumps--Test results

SHEMEL', V.B. kand.tekhn.nauk

Studying stalling cavitation conditions of centrifugal pumps.
Trudy VIGM no.22:13-29 '58.   (MIRA 11:11)
        (Centrifugal pumps) (Cavitation)

SHE'MEL', V.B., kand.tekhn.nauk

Optimum parameters for determining cavitation characteristics of
centrifugal pumps. Trudy VIM no.22:30-48 ' 58.   (MIRA 11:11)
    (Centrifugal pumps) (Cavitation)

SHEMELEVA, G. G.

3600. The visual colorimetric determination of thallium with methyl violet. G. G. Shemeleva and V. I. Petrashen'. *Trudy Novocherkas. Politekh. Inst.*, 1956, 41 (55), 35-40; *Ref. Zhur., Khim.*, 1957, Abstr. No. 19,562.—The determination of Tl^{III} is based on the reaction of complex halogen anions of Tl^{III} with methyl violet (I) to form sparingly sol. compounds of a blue - violet colour, which may be extracted with organic solvents. *Procedure* —Mix 1 or 2 ml of the neutial soln. of Tl^{III}, N HCl (0·7 ml) and a 0·02% soln. of I (1 ml). Add water to 5 ml and extract with 1 ml of toluene, which does not extract I. The quantity of Tl present is found by comparison with a series of standards.

C. D. KOPKIN

NIKOL'SKIY, B.P., otvetstvennyy redaktor; SHEMELEVA, Ye.V., redaktor;
        IVANOVA, A.V., tekhnicheskiy redaktor

   [Chromatography; a collection of articles] Khromatografiia; sbornik
   statei. [Leningrad] 1956. 176 p.   (MIRA 10:2)

   1. Leningrad, Universitet. 2. Chlen-korrespondent Akademii nauk
   SSSR (for Nikol'skiy)
        (Chromatographic analysis)

PHASE I BOOK EXPLOITATION   827

Leningrad. Inzhenerno-ekonomicheskiy institut

Khimiya i khimicheskiye proizvodstva (Chemistry and Chemical Industries)
[Leningrad] Izd-vo Leningradskogo univ-ta, 1957. 147 p. (Series: Its
Trudy, vyp. 20) 1,100 copies printed.

Eds.: (title page): Klyukvina, N.A., and Savchenkova, A.F.; Ed. (inside book):
Shemeleva, Ye. V.; Tech. Ed.: Vcdolagina, S.D.

PURPOSE: This issue is intended for specialists working in the field of oil shale
processing and chemical technology, as well as for industrial economists.

COVERAGE: The articles contained in this collection present some results of the
research conducted at the Department of Chemistry of the Leningrad Institute
of Engineering and Economics [LIEI]. The main topics are the complex proc-
essing of the Baltic oil shales and the utilization of the internal poten-
tial of chemical enterprises. Docent S.A. Volkov participated in the editing
of this collection.

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Chemistry and Chemical Industries   827

TABLE OF CONTENTS:

    The author discusses the elements of shale oil production in order to
    establish the optimum operational and economic characteristics. The
    LIEI and the VNIIPS (All-Union Scientific Research Institute for Shale .
    Processing) found that the production of liquid fuels from shale oil
    can be profitable when proper use is made of the entire range of other
    products obtained from the oxygen components of shale oil. Capital in-
    vestments, production costs, and marketing costs are taken into considera-
    tion. Tables shown by the author give statistical data from the shale
    oil industry and from the petroleum industry. The article contains
    6 tables. There are no references.

Card 2/ 11

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Chemistry and Chemical Industries

Leading practices of the YaShZ and VShZ were adopted at the LShZ bicycle tire shop. Furthermore, top norms from individual plants were accepted by the other plants. This led to the improvement of organization and technology of the respective units and the reduction of labor costs. A detailed operations analysis is given. The article contains 4 tables. There are no references.

Davidovich, A.K., Docent, Candidate of Economics. Study and Utilization of the Experience of Leading Workers in the Tire Industry 34
This article discusses the application of F.L. Kovalev principle (study, unification, and popularization of leading techniques) to the specific needs of the tire industry. The method requires coordination of improvements introduced by individual innovators and by leading brigades. All elements of the technological process are taken into consideration as well as labor efficiency of the personnel. The LShZ performed a detailed study of slicing and seaming operations and as a result awarded a prize to worker Trifonova. The introduction of her technique brought the percentage of waste down from 0.54 to 0.49. The same factory chose three outstanding vulcanization press operators: Kurakina, Samorodova, and Makarova. These workers operated 6 presses instead of the standard 5 and fulfilled their norms 110-111 percent with a 98.3 - 98.9 percent production of first grade quality (the limit for this grade being 97 percent).

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Chemistry and Chemical Industries   827

Their technique was introduced in the entire shop, resulting in a 25 per cent increase of production. The LShZ made a survey of the performance of mixing-mill operators. Five workers-innovators were chosen for this purpose (performance-102-103 percent of the norm): Krylov with 20 years experience, Loseva with 15 years experience, Nikolayev with 10 years experience, Kiselev with 3 years experience, and Vladimirov with 10 years experience. A time-motion study was made of the best mixing performance. The tire industry started the application of the Kovalev method to brigade performance. The calendering operation was selected as the most representative for the entire rubber industry. The study was conducted at the YaShZ and LShZ in cooperation with graduate students of the LIEI Chemistry Department. It was shown that the continuous operation of equipment requires not only an efficient crew but also proper planning of the technological process in order to eliminate stoppage. The use of individual mixers for one type of rubber is recommended, since changes in the type of charge can cut down the work time by 30 percent per day. Quality control is an important factor in this study. Innovator roller-operator Makarov at YaShZ was declared outstanding for his high quality production. The main problem in the study and popularization of improved practices is the cooperation of the same professional groups on an interfactory level and industry level. The article contains 8 tables. There are no references.

Card 5/11

Chemistry and Chemical Industries   827

Romanova, O.V., Engineer-economist. Certain Problems in the Methodology of   52
Determining the Productive Capacities of Enterprises of the Rubber Industry
    The rubber industry foresees an increase in production which should be
    doubled by 1960. In order to achieve this goal, the productive capacity
    of enterprises should be properly evaluated and utilized. The author
    describes the main shortcomings in this field. The existing directives,
    instructions, and organizational framework of the Ministry of Chemical
    Industries (MKhP SSR) are the source of many deficiencies. The principles
    underlying the determination of productive capacity are: 1) introduction
    of a modern technological process, modern techniques, and approved pro-
    duction methods established by innovators, 2) maximum utilization of equip-
    ment per time unit, and 3) basing the determination of productive capacity
    of equipment, shops, sections, and enterprises on the planned variety of
    products. The author gives formulas for the evaluation of productive
    capacities of various units and concludes the article with eight recommen-
    dations for the improvement of productivity in the rubber industry. There
    are 8 references, of which 5 are Soviet and 3 English.

Card 6/11

Chemistry and Chemical Industries   327

Dovetov, M. Sh., Candidate of Economics. Control of the Stock of Production
Materials at Chemical Industry Enterprises   83
    The author discusses the problem of inventory management and control
    in enterprises of the chemical industry. Three types of inventory levels
    are distinguished: for production stocks, individual, group, and total.
    The type of the technological process dictates the optimum inventory
    quantities computed for a suitable flow of materials during a given time
    period and production unit. The quantities for reserve stock are included.
    Formulas for the computation of various types of stock are given in the text.

Savchenkov, A.F., Docent, Candidate of Economics, Kotsan, B., Engineer-
economist. Present Trends in the Development of Chemistry and the Chemical
Industry in Czechoslovakia   92
    This is a review article which gives a general description of the Czecho-
    slovakian chemical industries from 1945 to 1957, with statistical data
    for the various periods. Data or given on the manufacture of mineral
    fertilizers, sulfuric acid, synthetic liquid fuels, formaldehyde, plastics,
    and other chemicals. A separate chapter is devoted to planning and organi-
    zation. The last chapter of this article describes the achievements in the
    field of chemistry during the postwar period. There are 5 Czech references.

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Chemistry and Chemical Industries   827

Klyukvin, N.A., Professor, Doctor of Technical Sciences, Abarenkova, Ye.A.,
Docent, Candidate of Technical Sciences, and Tarasenkova, Ye.M., Docent,
Candidate of Chemical Sciences. Study of the Catalytic Conversion of Shale   106
Oil. Part 2
    A detailed description of aluminosilicate catalysts is given in the first
part of the article. Estonian shales were subjected to semicoking in
contact with Cambrian clay catalysts of varying composition. The results
of the catalytic conversion of shale oil is given in several tables:
table 1 - yield of products from semicoking of shale; table 2 - fractional
content of shale oil per volume; table 3 - composition of fractions up to
225°; table 4 - composition of gas obtained from the decomposition of shale;
and table 5 - composition of fractions from 225 - 325°. A study was made
of the effect of Cambrian clay activated with H_2SO_4, and with the addition
of Cr_2O_3. It was determined that aluminosilicate catalysts increase the
yield of the gasoline-ligroin fraction and of the Diesel fraction. There
are 5 tables and 24 references, of which 18 are Soviet and 6 English.

Card 8/11

Chemistry and Chemical Industries   327

I stage: $2CH_4 + O_2 = 2CO + 4H_2$

II stage: $2CO = C + CO_2$.
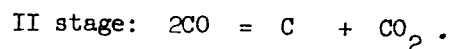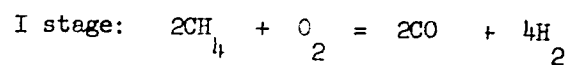
The low temperature in the second stage yields a higher grade carbon black and permits easy separation of the catalyst from the product when this is necessary. The nickel catalyst in the first stage and (19 parts nickel, 1 part iron, 80 parts kieselghur) the iron catalyst in the second stage show good performance. This method yields 1 ton of carbon black from 10240 m^3 of natural gas containing 90 percent of CH_3. This means it requires 6.5 times less gas than present day plants which produce channel black. The article gives 6 tables and one figure. There are no references.

Rogov, S.V., Candidate of Chemical Sciences. Physicochemical Analysis of Nonaqueous Systems. Density, Viscosity, and Electrical Conductivity of the System: Stannic Chloride - Ethanol. Part 1
  This paper discusses the properties of the system: 140
  $SnCl_4 - C_2H_5OH$. The system was studied at temperatures of 30, 40, and
  50° and with $SnCl_4$ concentrations from 1.15 to 24.9 mol. percent.

Card 10/11

FRANKLIN, A.R.

Analysis of ... activity of dolphin ... and ... range ... Biofizika 10 no.1:118-122 Ja-F '65.
(MIRA 18:6)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR i fizicheskiy fakul'tet Gosudarstvennogo universiteta, Leningrad.

1.   SHEMELIN, V. M.

2.   USSR (600)

4.   Zlatoust Region - Iron Ores

7.   Revision of old deposits and prospecting for new iron ore deposits in the vicinity of Zlatoust. /Abstract./ Izv.Glav.upr.geol.fon., no. 2, 1947.

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

DOBRYKH, L.I.; SHEMELININ, A.A.

Torsional suspension of the 10-ton trailer. Avt. prom. no.5:21 My '60.

(MIRA 14:3)

1. Minskiy avtozavod.

(Truck trailers)

SHEMELININ, S. P.
CA

15

Aqueous thiodiphenylamine suspension against Anopheles maculipennis larvae. S. P. Shemelinin. *Med. Parasitol. Parasitic Diseases* (U.S.S.R.) 16, No. 4, 84 (1947).—A suspension of thiodiphenylamine and very fine sand (5:1) was 99% effective when used to the extent of 1.2 kg. mixt./hectare. H. L. Williams
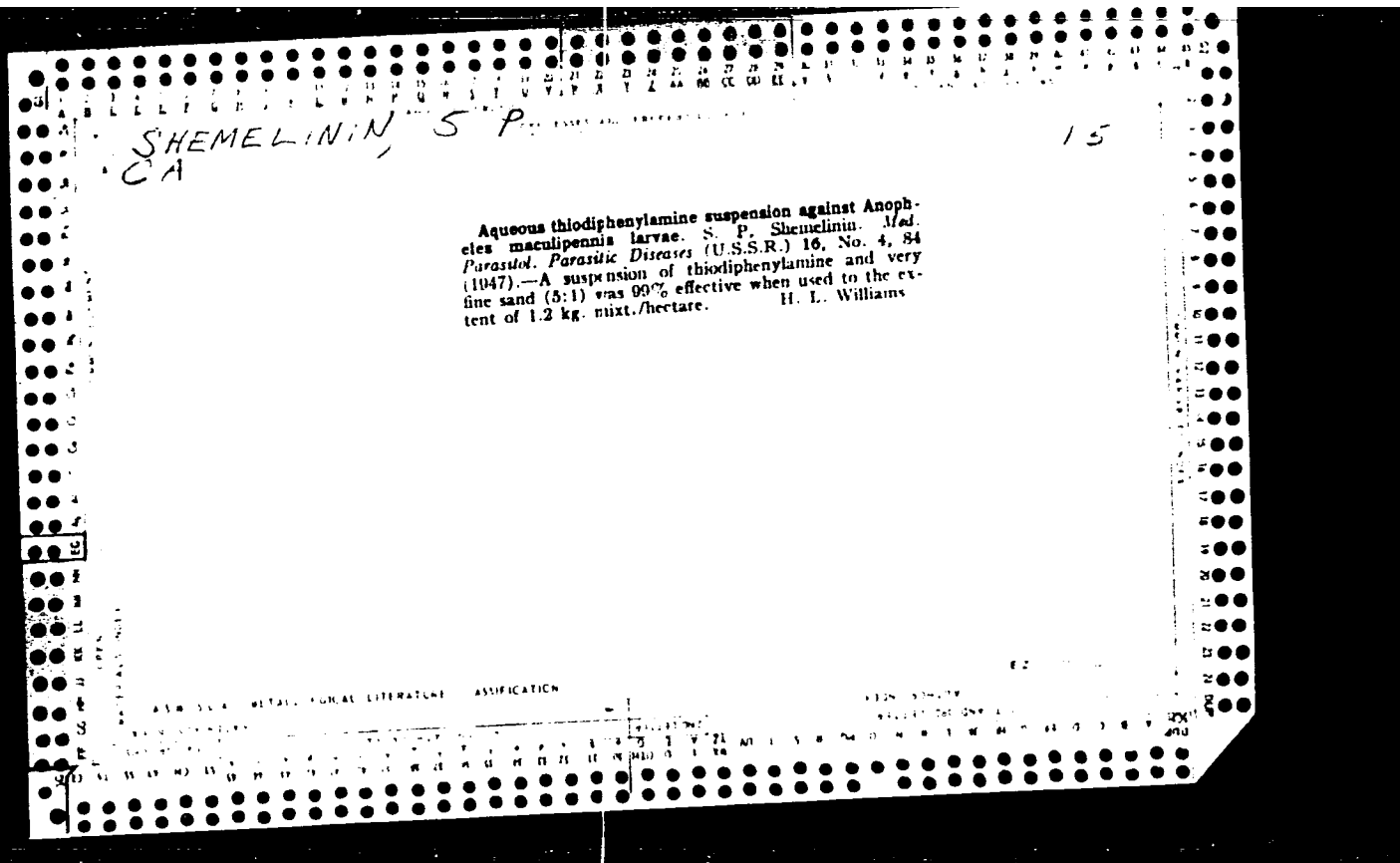
VOROPAY, A.P.; ASHIN, G.K.; GONCHARUK, S.I.; MAKSIMENKO, I.I.;
SUSLYAYEVA, Ye.L.; SHEMANIN, G.M.; SHEMENEV, G.I., kand.
filos.nauk, red.; FATEYEV, P.Ya., retsenzent; VOLKOV,
P.S., retsenzent; PESKOVA, L.N., red.; BOBROVA, Ye.N.,
tekhn. red.

[Communist labor of railroad workers] Kommunisticheskii trud
zheleznodorozhnikov. Moskva, Transzheldorizdat, 1962. 72 p.
(MIRA 15:7)
(Railroads--Employees) (Socialist competition)

SOV/68-58-12-8/25

AUTHOR: Tsynovnikov, A.S., Shemeryankin, B.V., Shvarts, S.A.
            and Bogoyavlenskiy, K.A.

TITLE: The Determination of Size Analysis of Coke on Screens
            with Square and Round Mesh (Opredeleniye sitovogo
            sostava koksa na sitakh s kvadratnymi i kruglymi
            otverstiyami)

PERIODICAL: Koks i Khimiya, 1958, Nr 12, pp 25-28 (USSR)

ABSTRACT: The relationship between the size analysis of coke on
            screens with square and round mesh, namely the ratio of
            D : S (diameter of square mesh to diameter of round mesh)
            for cokes of various origin was investigated.   The
            experimental results are shown in figs 1, 2, and Tables
            1, 2.   Coefficients (K) for recalculating size
            distribution from screens with round mesh to screens

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SOV/68-58-12-8/25

The Determination of Size Analysis of Coke on Screens with Square and Round Mesh

with square mesh for various types of coke are given in Table 3 and mesh sizes for round and square mesh screens for various size fractions in Table 4.

There are 4 tables and 2 figures.

ASSOCIATIONS: VUKhIN and UKhIN

Card 2/2

TSYNOVNIKOV, A.S.; SHEMERYANKIN, B.V.; LIKHOGUB, Ye.P.; MUSTAFIN, F.A.;
BERKUTOVA, G.I.

Increasing the charges of coke ovens during leveling. Koks i
khim. no.2:19-22 '60.   (MIRA 13:5)

1. Vostochnyy uglekhimicheskiy institut (for TSynovnikov,
Shemeryankin). 2. Teplotekhstantsiya (for Likhogub). 3. Nizhne-
Tagil'skiy metallurgicheskiy kombinat (for Mustafin, Berkutova).
            (Nizhniy Tagil--Coal--Carbonization)

SHEMERYANKIN, B.V.

Shape of the fragments and the size distribution of coke. Koks.i khim.
no.4:30-33 '60.   (MIRA 13:6)

1. Vsesoyuznyy uglekhimicheskiy institut.
          (Coke)

GRYAZNOV, N. S. ; SHEMERYANKIN, B. V. ; TSYNOVNIKOV, A. S.

Classification of coke according to types and sizes. Koks i khim.
no.10:22-26 '60.   (MIRA 13:10)

1. Vostochnyy uglekhimicheskiy institut.
                            (Coke)

FOMIN, A.P.; SHEMERYANKIN, B.V.; CHEBOTAREV, V.P.; KOPELIOVICH, L.V.;
KOSTYUNIN, I.K.

Experimental and industrial coking of coal charges with low
grindability and different degrees of grinding of the com-
ponents. Koks i khim. no.7:4-7 Jl '61.   (MIRA 14:9)

1. Chelyabinskiy metallurgicheskiy zavod.
                              (Coke industry)

SHEMERYANKIN, B.V.; TSYNOVNIKOV, A.S.; RYTCHENKO, A.I.

Bulk weight of coke. Koks i khim. no.8:30-33 '61. (MIRA 15:1)

1. Chelyabinskiy metallurgicheskiy zavod (for Shemeryankin).
2. Vostochnyy uglekhimicheskiy institut (for TSynovnikov).
3. Nizhne-Tagil'skiy metallurgicheskiy kombinat (for Rytchenko).
(Coke)

SHEMERYANKIN, B.V.; DOBROVOL'SKIY, I.P.; KOSTYUNIN, I.K.; KOPELIOVICH, L.V.;
DUBOVIK, A.N.; Prinimali uchastiye: KOSTENKO, A.R.; VAKHTOMOV, S.P.;
CHERVOV, A.P.

Ways of reducing the porosity of pitch coke. Koks i khim.
no.2:25-29 '62.   (MIRA 15:3)

1. Chelyabinskiy metallurgicheskiy zavod (for Shemeryankin,
Dobrovol'skiy, Kostyunin, Kopeliovich, Kostenko, Vakhtomov,
Chervov). 2. Koksokhimstantsiya (for Dubovik).
(Coke)

SHEMERYANKIN, B.V.; KOPELIOVICH, L.V.; DOBROVOL'SKIY, I.P.; OSHCHEPKOVA, N.V.

Studying the formation of the porous structure of pitch coke. Koks
i khim. no.3:25-28 '63.   (MIRA 16:3)

1. Chelyabinskiy metallurgicheskiy zavod (for Shemeryankin, Kopeliovich,
Dobrovol'skiy, I.P.). 2. Gosudarstvennyy nauchno-issledovatel'skiy
institut elektrodnoy promyshlennosti (for Oshchepkova).
                              (Coke)

FEDIN, A.N.; DIB TOV, G.N.; SHEMERY BREMS, N.

Role of furfurolein in the hardening of furfuro/furan-acetone polymer. Plast.massy no.7:19-20 1963.   (MIRA 16:10)

S/081/62/000/021/039/069
B171/B101

AUTHORS: Ivanov, B. M., Shemet, A. M., Vilenskiy, Yu. B.

TITLE: Investigation of the stabilizing effects of some thiazole
               derivatives on photographic emulsions

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1962, 381, abstract
               21L224 (Tr. Vses. n.-i. kinofotoin-ta, no. 43, 1961, 31-39)

TEXT: Following thiazole derivatives were tested: benzthiazole tetra-
zoles with various substitutes in the benzene ring; 4,5 substituted
thiazole tetrazoles, the substitutes being H, CH_3 or C_6H_5; and substances
containing triazene chains. The following emulsions were investigated:
(a) a neutral silver chloride emulsion, containing 20 g Ag/kg;
pH = 7.2; pAg = 6.8 (S_{02} = 0.01; γ = 2.5; D_o = 0.04 in the beginning of
the 2d ripening and respectively 0.05, 4.0, and 0.10 at the optimum of the
2d ripening; (b) an ammonia silver bromiodide emulsion containing
40 g Ag/kg; pH = 6.9; pAg = 9.1. The stabilizing properties of
benzthiazole tetrazoles depend on the nature of the silver halide in the
emulsion, silver chloride emulsions being stabilized by these substances

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Investigation of the stabilizing ...

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B171/B101

for a wide range of pH, whereas the silver bromide emulsions are not stabilized. De-sensitizing properties of benzthiazole tetrazoles do not depend on the choice of emulsion. The stabilizing properties of benzthia- zole tetrazoles are accompanied by a strong de-sensitization. The stabilizing properties of benzthiazole tetrazoles are attributed to the existence of the azido-tetrazole tautomerism. [Abstracter's note: Complete translation.]

Card 2/2

SHEMET, Aleksey Savel'yevich; IOFFE, S.Ye., redaktor; SAVICH, M.P., redaktor;
OYSTRAKH, V.G., tekhnicheskiy redaktor

[Work practice of a crew of conveyor movers] Opyt raboty kompleksnoi
brigady posadoperenoschikov. Alma-Ata, Kazakhskoe gos. izd-vo,
1956. 13 p.   (MLRA 9:10)

1. Brigadir kompleksnoy brigady posadoperenoschikov uchastka No. 3
shakhty No.35 kombinata "Karagandaugol'" (for Shemet)
        (Mine haulage)

KRESHKOV, A.P.; BYKOVA, L.N.; SHEMET, N.Sh.

Potentiometric method of differentiated titration of organic bases
in a methyl ethyl ketone medium. Dokl.AN SSSR 134 no.1:96-99
S '60.   (MIRA 13:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut im. D.I.Mendeleyeva.
Predstavleno akad. A.P. Vinogradovym.
          (Potentiometric analysis)
          (Bases (Chemistry))

SHEMET, N. Sh., Cand. Chem. Sci. (diss) "Potentsiometric Method of Titration of Bases in Non-Aqueous Solutions," Moscow, 1961, 2____. (Moscow Chem-Engr. Instit.) 150 copies (KL Supp 12-61, 257).

KRESHKOV, A.P.; BYKOVA, L.N.; SHEMET, N. Sh.

Separate potentiometric titration of mixtures of organic bases in a methylethylketone medium with a perchloric acid solution. Zhur.anal.khim. 16 no.3:331-336 My-Je '61.   (MIRA 14:6)

1. D. I. Mendeleev Moscow Chemico-Technological Institute.
(Bases (Chemistry))

KRESHKOV, A.P.; BYKOVA, L.N.; SHEMET, N.Sh.

Nonaqueous solutions. Part 15: Study of the differentiating properties of organic solvents with respect to bases. Zhur.ob.khim. 32 no.8:2397-2402 Ag '62. (MIRA 15:9)
(Solvents)   (Aniline)

SHEMET, V.I., inzh.

Use of permanent magnets for the prevention of incrustations.
Energetik 8 no.9:7-8 S '60   (MIRA 14:9)
(Boilers--Incrustations)

CHERNYAK, A.S.; SHEMET, V.V.

Physicochemical investigation of aqueous solutions of sulfuric and
phosphoric acids. Zhur.necrg.khim. 8 no.3:738-741 Mr '63.   (MIRA 16:4)
            (Sulfuric acid)   (Phosphoric acid)

SHCHYAKIN, F.M.; BERDNIKOV, A.I.

Fluorescence detection of barbituric acid and its derivatives.
Lav. lab. 31 no. 12:1449 '65   (MIRA 19:1)

1. 1-y Moskovskiy meditsinskiy institut.

POLYAKOV, Yu. I.; IVANOV, L. M.; KOSTIN, N. I.; SHEET, V. V.

"O povyshenii chuvstvitel'nosti pryamykh fotoelektricheskikh metodov emissionnogo spektral'nogo analiza."

report submitted for 1st Intl Symp on Hyperpure Materials in Science and Technology, Dresden, GDR, 27 Sep-1 Oct 65.

Institut geokhimii i analiticheskoy khimii im Vernadskiy Academii nauk SSSR, Moscow.

L-15301-6:   EWT(m)/EWP(t)/EWP(b)   IJP(c)   DS/JD/JG

ACC NR: AP6002813

SOURCE CODE: UR/0078/66/011/001/0184/0190

AUTHORS: Navtanovich, M. L.; Chernyak, A. S.; Shemet, V. V.

ORG: none

TITLE: Extraction of metals from aqueous solutions of hydrohalic acids by means of dialkylalkylphosphinates

SOURCE: Zhurnal neorganicheskoy khimii, v. 11, no. 1, 1966, 184-190

TOPIC TAGS: rare earth element, solvent extraction, scandium, iron

ABSTRACT: Investigation of extracting iron and rare earth metals from HCl and of tantalum and niobium from HF using dialkylalkylphosphinates (DAAPh) are reported, and new data on chemistry of DAAPh extraction of scandium are presented. The latter subject was studied by the authors and reported earlier (Nauchn. tr. Irgiredmeta, 1963, vyp. 11, str. 252). A new concept of the "relative effectiveness of extract- ants" ($RE_e^c - D_{e2}/D_{e1}$, where c = ratio of initial concentrations of solvent and metal, D_{e2} = distribution coefficient of the investigated solvent, D_{e1} = distribution coefficient of known solvent) was formulated for evaluating new extractants. It was established that the extracting ability of DAAPh with alkyl radicals from C_3H_7 to $C_{12}H_{25}$ is directly related to the electron-donating properties of phosphoryl oxygen.

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UDC: 541.183.3

L 15301-66

ACC NR: AP6002813

These solvents were found much more effective than trialkylphosphates in extractions from HF, RE_e^1 for Sc and Fe^{3+} being 2.2 and 1.5, respectively, for rare earth elements RE_e^{10} is $\sim$ 3.5, for Nb--1.5, for Ta $\sim$ 1.4--2.4. Orig. art. has: 5 tables, 5 figures, and 4 equations.

SUB CODE: 07/   SUBM DATE: 02Apr65/   ORIG REF: 007/   OTH REF: 003

Card 2/2

ACC NR: AR6035489   SOURCE CODE: UR/0081/66/000/017/V141/V141

AUTHOR: Navtanovich, M. L.; Shemet, V. V.; Sutyrin, Yu. Ye.; Chernyak, A. S.

TITLE: Search for new ways of preparing pure scandium, lanthanum and neodymium oxides

SOURCE: Ref. zh. Khimiya, Part I, Abs. 17V32

REF SOURCE: Nauchn. tr. Irkutskiy n.-i. in-t redk. met., vyp. 13, 1965, 390-398

TOPIC TAGS: scandium compound, lanthanum oxide, neodymium compound, metal purification

ABSTRACT: The following methods of purifying 99% Se_2O_3 were studied: leaching impurities out of solid oxide, precipitation and extraction of Sc from aqueous solutions, selective extraction of impurities. The extent of removal of Si, Ca, Mg, Al, Fe, Ti, Zr and Yb by each of these methods was determined. It was found that a combination of several methods (for example, thiosulfate and oxalate precipitation of Sc and extraction of Zr with 2.5% TBP) produces Sc_2O_3 of > 99.95% purity. The possibility of removing La and Nd oxides from impurities other than rare earths was investigated. Selective precipitation of rare earths in the form of hydroxide and oxalate, crystallization of $LaCl_3 \cdot 7H_2O$ and $NdCl_3 \cdot 6H_2O$ isothermally and during salting out with hydrogen chloride, and selective elution of impurities with oxalic acid with KU-2 cation exchange resins on which the rare earth element was adsorbed were studied. It

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ACC NR: AR5035439

was found that salting out with hydrogen chloride followed by sorption of the rare earth element on the cation exchange resin and elution of the impurities with oxalic acid produces La_2O_3 and Nd_2O_3 of more than 99.99% purity. Authors' abstract. [Translation of abstract]

SUB CODE: 07 LL

Card 2/2