S/144/60/000/03/008/017
E194/E455

Practical Adjustment of Current Commutation

the three oscillograms of Fig 5. A new method of adjusting commutation is based on the use of this effect. An insulated auxiliary brush is installed 2 to 2.5 mm behind the trailing edge of the main brush and the voltage between the brushes is measured by means of an oscillograph shunted with a capacitance of 4 to 10 microfarads. The interpole flux is then adjusted until the oscillograph shows minimum voltage. The magnitude of the peak voltage may instead be measured by a valve voltmeter. The position of minimum voltage corresponds to the centre of the zone of sparkless operation. The procedure also reveals the presence of mechanical vibration of the brushes. There are 6 figures and 3 Soviet references.

ASSOCIATION: Ural'skiy politekhnicheskiy institut
(Ural Polytechnical Institute)

SUBMITTED: October 25, 1959

Card 3/3

SIUNOV, Nikolay Sergeyevich, doktor tekhn.nauk, prof.; YUSHMANOV, Yuriy Ivanovich, aspirant

Characteristics of a machine with double feed operating as a generator. Izv. vys. ucheb. zav.; elektromekh. 3 no.6:88-92 '60. (MIRA 15:5)

1. Zaveduyushchiy kafedroy elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Siunov). 2. Kafedra elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Yushmanov).

(Electric generators)

SIUNOV, Nikolay Sergeyevich, doktor tekhn.nauk, prof.; GAVRILOV, Boris Konstantinovich, kand.tekhn.nauk; starshiy prepodavatel' KOVYLOV, Boris Vladimirovich, assistent

Effect of capacitance on the performance of a mechanical rectifier. Izv. vys. ucheb. zav.; elektromekh. 3 no.10:93-97 '60. (MIRA 14:4)

1. Zaveduyushchiy kafedroy elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Siunov). 2. Ural'skiy politekhnicheskiy institut (for Gavrilov). 3. Kafedra elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Kovylov).
(Rotary converters)

SIUNOV, N.S., prof., doktor tekhn.nauk; PAVLININ, V.M., inzh.

Motor-generator frequency converter (50/200 c.p.s.) and its electromagnetic characteristics. Vest. elektroprom. 31 no.5:9-13 My '60. (MIRA 13:8)
(Rotary converters) (Frequency changers)

S/144/61/000/002/003/004
E194/E184

9.3270 (also 1068, 1031)

AUTHORS: Pavlinin, V.M., Candidate of Technical Sciences, Acting Docent, and Siunov, N.S., Doctor of Technical Sciences, Professor, Head of Department

TITLE: The Magnetic Permeability of Electrical Steel Premagnetized at High Frequency

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1961, No. 2, pp. 21-26

TEXT: The magnetic circuits of many electromagnetic devices such as frequency changers are magnetised simultaneously by two fluxes of different frequency. Design of such magnetic circuits must allow for changes in permeability with double magnetization. An analytical solution has been offered by V.S. Novokshenov (Ref.1: Izvestiya Tomskogo politekhnicheskogo instituta, Vol.94, GEI 1958). The present article considers calculated and experimental coefficients of change of permeability which permit the use of ordinary magnetization curves. The permeability depends on the frequency ratio of the field $n = f_2/f_1$ and on the magnitudes and wave shapes of the fields. The case here considered is when n

S/144/61/000/002/003/004
E194/E184

The Magnetic Permeability of Electrical Steel Premagnetized at High Frequency

is an even number, so that in a machine magnetic circuit the component fields coincide on one pole pitch if they are opposed on another. For analytical solution in the general form assume that the inductions are sinusoidal and consider two series and cross-connected toroids in which the resultant magnetic field is:

$$B = \pm B_1 \sin \psi + B_2 \sin (n\psi - \alpha) \quad (1)$$

where B_1 and B_2 are the maximum values of inductions of frequency f_1 and f_2; $n = f_2/f_1$ - defined as above; $\psi = \omega_1 t = 2\pi f_1 t$; α is the displacement angle between the fields expressed in electrical degrees relative to the high frequency field. The magnetization curve of the field is expressed by the equation:

$$H = aB + bB^3 + cB^5 \quad (2)$$

Hysteresis is neglected and it is considered that the magnetization curves are the same for different frequencies.

The Magnetic Permeability of Electrical Steel Premagnetized at High Frequency

Lengthy expressions are then derived for the resultant fields H_I and H_{II} in the steels of the first and second sections of the magnetic circuit (toroid). It is shown that the amplitude values of the harmonic components of field intensity are functions of the inductions B_1 and B_2 and it is shown that the field intensity due to the winding with frequency f_1 is:

$$H_1' = \frac{1}{2}(H_I - H_{II}) \qquad (5)$$

By appropriate substitution it is shown that under conditions of simultaneous magnetization by fluxes of different frequency the field intensity of the primary field contains only odd harmonics. The first, third and fifth harmonics are mainly due to the field of frequency f_1 and the remainder are the result of mutual modulations. The field intensity due to the high frequency winding is given by:

$$H_2' = \frac{1}{2}(H_I + H_{II}) \qquad (7)$$

S/144/61/000/002/003/004
E194/E184

The Magnetic Permeability of Electrical Steel Premagnetized at High Frequency

By appropriate substitution it is shown that in this case the high frequency field contains only even harmonics, and the harmonics of order n, $3n$, and $5n$ are mainly due to the field of frequency f_2 and the rest result from modulations. The change in magnetic condition of the steel with premagnetization at a different frequency is conveniently expressed by a coefficient equal to the ratio of the equivalent permeability $\mu_{0\ equiv}$ and the absence of premagnetization to the permeability μ_{equiv} in its presence:

$$\gamma_k = \frac{\mu_{0\ equiv}}{\mu_{equiv}} = \frac{H_{eff}}{H_{0\ eff}} \qquad (10)$$

Further equations are then derived from which it is shown that:
(a) the coefficients of change of magnetic permeability γ_{k1} and γ_{k2} when n is even do not depend on the phase angle α between the fields;
(b) the characteristics $\gamma_{k1} = f(B_1)$, for different values of B_2 coincide with the characteristics $\gamma_{k2} = f(B_2)$ for different

The Magnetic Permeability of Electrical Steel Premagnetized at High Frequency

values of B_1, if in the first expression the indices in the inductions 1 and 2 are interchangeable. Consequently, premagnetization by high frequency flux alters the magnetic permeability of the steel to the fundamental frequency flux by the same amount as the high frequency flux is altered with premagnetization by a field of fundamental frequency. The following expression is then derived for γ_k:

$$\gamma_k = \sqrt{1 + \frac{1}{k_5}(k_1 B_2^2 + k_2 B_2^4 + k_3 B_2^6 + k_4 B_2^8)} \qquad (16)$$

The coefficients k_1, k_2 etc. are functions of B_1 which are given and data is presented from which these constants may be calculated for various grades of electrical steel. The accuracy with which the magnetization curve is then approximated is shown by the curves of Fig.1 in which the bold line corresponds to the steel grades Э11 (E11), Э12 (E12) and Э21 (E21) and the dotted line to the approximation. Eq.(16) was then used for these

The Magnetic Permeability of Electrical Steel Premagnetized at High Frequency

grades of steel to construct the curves given in Fig.2 of $\gamma_k = f(B_1)$ for various values of B_2. Analogous characteristics were determined experimentally with simultaneous magnetization of toroids with two fluxes of frequency 50 c/s and 200 c/s. Experimental curves are given in Fig.3 for steel grade E11 0.5 mm thick and in Fig.4 for steel E21 0.35 mm thick. It will be seen that the general character of the experimental and calculated curves is identical. The maximum values of calculated and experimental curves coincide approximately in the region where the sum of induction components does not exceed 16000-18000 gauss. At higher values of saturation there is greater disagreement between the maximum values of the experimental and calculated curves; this is because the induction becomes non-sinusoidal in the test toroids. The calculated curves for γ_k have shallower slope than the experimental. At low values of saturation both experimental and calculated values of coefficient of change of permeability may be less than 1, and consequently in weak magnetic

21474

S/144/61/000/002/003/004
E194/E184

The Magnetic Permeability of Electrical Steel Premagnetized at High Frequency

fields premagnetization at high frequency increases the permeability of the steel instead of reducing it. It is concluded that if due allowance is made for these remarks it may be considered that in the working region of induction values of the coefficient γ_k calculated by Eq. (16) are in satisfactory agreement with experiment.
There are 4 figures and 5 Soviet references.

ASSOCIATION: Kafedra elektricheskikh mashin, Ural'skogo politekhnicheskogo instituta
(Department of Electrical Machines of the Ural Polytechnical Institute)

SUBMITTED: September 24, 1960

Card 7/10

21474
S/144/61/000/002/003/004
E194/E184

The Magnetic Permeability of .....

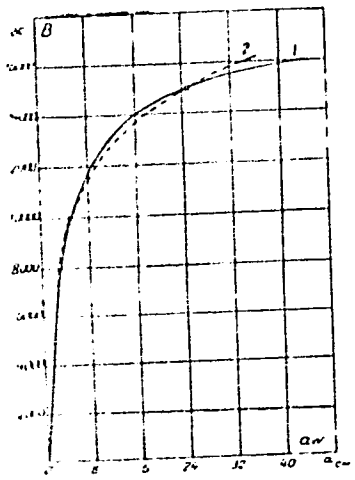


Fig.1

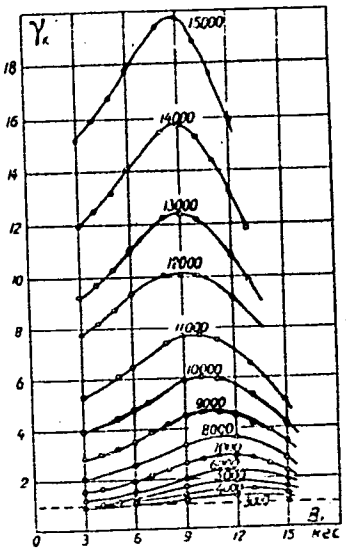


Fig.2

Card 8/10

21474
S/144/61/000/002/003/004
E194/E184

The Magnetic Permeability of .....

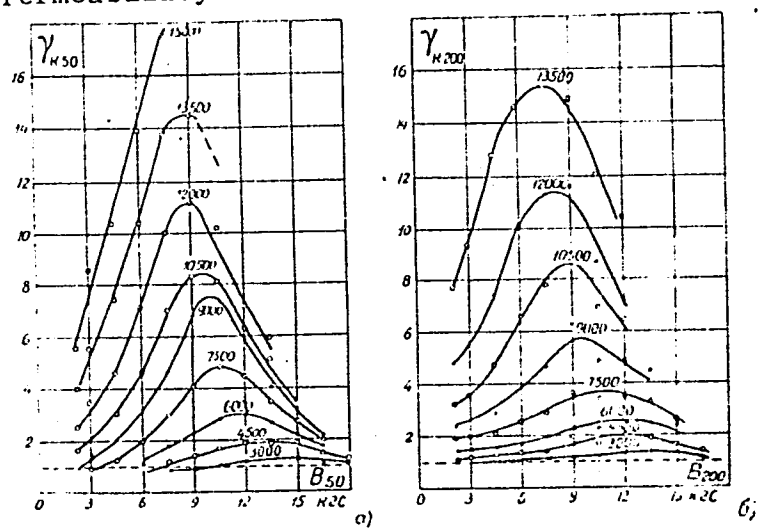


Fig.3

Card 9/10

The Magnetic Permeability of ....

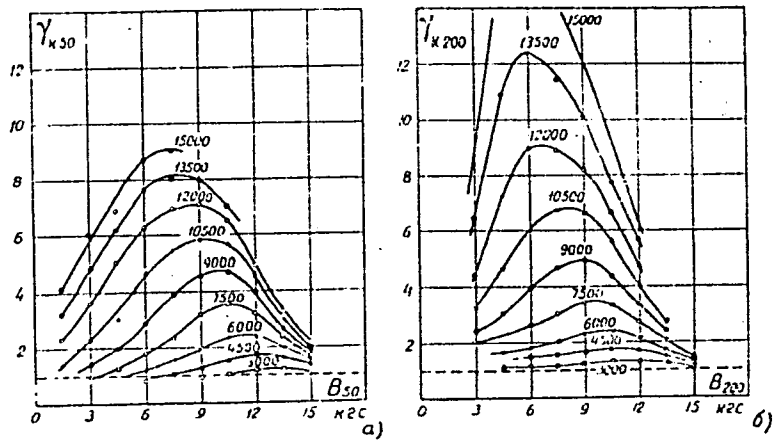


Fig.4

Card 10/10

S/196/61/000/009/030/052
E194/E155

AUTHORS: Siunov, N.S., Gavrilov, B.K., and Kovylov, B.V.

TITLE: A synchronous motor with mechanical rectifier shunted by capacitance

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.9, 1961, 23, abstract 9I 155. (Vestn. elektroprom-sti, no.2, 1961, 45-48)

TEXT: The commutation of the mechanical rectifier of a machine field system was investigated. The supply was from a three-winding transformer controlled by a magnetic shunt. The alternating current side of the mechanical rectifier was shunted by capacitors connected in delta. The single-phase current rectification conditions are considered. The physical processes that take place in mechanical rectifiers are explained and the value of capacitance required to ensure sparkless commutation is selected. It is established that the transformer circuit of the mechanical rectifier should contain the following ohmic resistance:

$$r_k = 2\sqrt{L/C}$$

Card 1/2

A synchronous motor with ...

It would not be rational to increase the transformer resistance, because of the consequent lower efficiency, and so the necessary conditions can be achieved by connecting shunt capacitance C across the rectifier input. The additional capacitance reduces the amplitude, frequency and rate of voltage restoration, thus extending the sparkless zone to angular differences of up to 30 electrical degrees. Shunting resistors selected to give maximum efficiency give sparkless commutation in the zone up to 10 electrical degrees when the rectifier operates with a transformer without compounding winding. The greatest width of the sparkless zone achieved by the use of input capacitance across the rectifier, and the possibility of maintaining the angular difference at the lowest levels, together ensure sparkless operation of the rectifier over all ranges of motor load under static and dynamic conditions. A motor with the suggested field circuit has greater static and dynamic stability than motors with machine excitation, and the efficiency of a mechanical rectifier, allowing for the additional capacitors, is 96-97%. 5 illustrations.

[Abstractor's note: Complete translation.]

Card 2/2

PAVLININ, V.M.; SIUNOV, N.S.

Magnetic permeability of electrical engineering steel subjected to a magnetizing flux with an increased frequency. Izv. vys. ucheb. zav.; elektromekh. 4 no.2:21-26 '61. (MIRA 14:9)
(Magnetic circuits) (Steel--Magnetic properties)

SIUNOV, N.S.; KOVYLOV, B.V.

Choice of the shunting capacitance for the mechanical rectifier of a synchronous motor. Izv. vys. ucheb. zav.; elektromekh. 4 no.10:111-112 '61. (MIRA 14:11)
(Electric motors, Synchronous)

SIUNOV, N.S., doktor tekhn.nauk; GABRILOV, B.K., kand.tekhn.nauk;
KOVYLOV, B.V., inzh.

Synchronous motor with a mechanical rectifier shunted by capacitance.
Vest.elektroprom. 32 no.2:45-48 F '61. (MIRA 15:5)
(Electric motors, Synchronous)

KOSTENKO, M.P.; SIUNOV, N.S.; KAZOVSKIY, Ye.Ya.; MIKLYAYEV, M.S.

Use of a frequency method for determining the starting characteristics of synchronous motors. Izv. AN SSSR. Otd. tekh. nauk. Energ. i avtom. no.1:63-69 Ja-F '62. (MIRA 15:3)
(Electric motors, Synchronous)

ANISHCHENKO, Yevgeniy Ivanovich, aspirant; KIRPUCHNIKOV, Viktor Mikhaylovich, aspirant; SIUNOV, Nikolay Sergeyevich, doktor tekhn.nauk, prof.

Use of computer devices in the harmonic analysis of flux and e.m.f. of a synchronous machine. Izv.vys.ucheb.zav.; elektromekh. 5 no.9:985-993 '62. (MIRA 16:1)

1. Kafedra elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Anishchenko). 2. Kafedra elektrifikatsii promyshlennykh predpriyatiy Ural'skogo politekhnicheskogo instituta (for Kirpichnikov). 3. Zaveduyushchiy kafedroy elektricheskikh mashin, rektor Ural'skogo politekhnicheskogo instituta (for Siunov).
(Electric machinery, Synchronous) (Magnetic circuits)
(Electric network analyzers)

PAVLININ, Viktor Mikhaylovich, kand.tekhn.nauk, dotsent; SIUNOV, Nikolay Sergeyevich, doktor tekhn.nauk, prof.

Optimum dimensions and electromagnetic loads of a one-machine frequency converter. Izv. vys. ucheb. zav.; elektromekh. 5 no.12:1365-1371 '62. (MIRA 16:6)

1. Kafedra elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Pavlinin). 2. Zaveduyushchiy kafedroy elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Siunov).
(Frequency changers)

SIUNOV, N.S., doktor tekhn.nauk; MIKLYAYEV, M.S., inzh.; KALISTRATOV, G.A., inzh.

Experimental determination of the parameters of synchronous machines using a frequency method. Vest. elektroprom. 33 no.7:48-51 Jl '62. (MIRA 15:11)

(Electric machinery, Synchronous)

SIUNOV, N.S.; MILAYKINA, R.N.

Approximate method for determining the principal parameters of the excitation circuit of a phase compounded synchronous generator. Trudy Ural. politekh. inst. no.124:5-15 '62. (MIRA 16:8)

SIUNOV, N.S.; MIKLYAYEV, M.S.

Use of a frequency method for determining the start characteristics of synchronous motors. Trudy Ural. politekh. inst. no.124:37-42 '62. (MIRA 16:8)

L 17301-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AP3002502 S/0105/63/000/006/0001/0006

AUTHOR: Siunov, N. S. (Dr. of technical sciences, Prof.); Zborovskiy, I. A. (Engineer); Tarasov, N. M. (Candidate of technical sciences, Docent)

TITLE: Calculating electromechanical transients in a synchronous motor excited by semiconductor rectifiers

SOURCE: Elektrichestvo, no. 6, 1963, 1-6

TOPIC TAGS: transient , synchronous motor, semiconductor rectifier, SM-81-4 synchronous motor

ABSTRACT: Electromechanical transients in a synchronous motor whose field winding is supplied from a 3-phase rectifier, which, in turn, is supplied by a 3-winding transformer, have been theoretically and experimentally investigated. The external characteristic of the rectifier is used for setting up equations that describe the transients. Using conventional equivalent-circuit techniques and

Card 1/2

L 17301-63

ACCESSION NR: AP3002502

5

Park-Gorev equations for direct- and quadrature-axis parameters, a final set of nonlinear differential equations is developed. Type SM-81-4, 15-kva, 220-v, 0.8-p.f., delta-connected motor and type VS-100 selenium-rectifier bridge circuit were used for specific calculations and experiments. Calculated and experimental curves illustrate the transients in the motor upon a sudden change in its torque from 0.22 to 0.98 relative units. The "Ural-1" computer was used, and the "program was set up by I. M. Sery*y." Orig. art. has: 7 figures and 60 formulas.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. Kirova (Ural Polytechnic Institute)

SUBMITTED: 14Nov62 DATE ACQ: 12Jul63 ENCL: 00

SUB CODE: EE NO REF SOV: 005 OTHER: 000

Card 2/2

KRAVTSOV, Nikolay Yakovlevich, aspirant; SIUNOV, Nikolay Sergeyevich, doktor tekhn. nauk, prof.

Equivalent networks and differential equations of synchronous generators with self-excitation. Izv. vys. ucheb. zav.; elektromekh. 6 no.4:451-461 '63. (MIRA 16:7)

1. Kafedra elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Kravtsov). 2. Zaveduyushchiy kafedroy elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Siunov).
(Electric generators) (Differential equations)
(Equivalent circuits)

SIUNOV, Nikolay Sergeyevich, doktor tekhn. nauk, prof.; TARASOV, Nikolay Mikhaylovich, kand. tekhn. nauk, dotsent; BREYEV, Vadim Nikolayevich, kand. tekhn. nauk, dotsent; ZBOROVSKIY, Isaak Aronovich, starshiy prepodavatel'

Compounded synchronous motor with medium power rating and forced excitation. Izv. vys. ucheb. zav.; elektromekh. 6 no.10: 1212-1220 '63. (MIRA 17:1)

1. Zaveduyushchiy kafedroy elektricheskikh mashin, rektor Ural'skogo politekhnicheskogo instituta (for Siunov). 2. Kafedra teoreticheskoy elektrotekhniki Ural'skogo politekhnicheskogo instituta (for Tarasov, Zborovskiy). 3. Zaveduyushchiy kafedroy elektrooborudovaniya promyshlennykh predpriyatiy Tadzhikskogo politekhnicheskogo instituta (for Breyev).

ANISHCHENKO, Yevgeniy Ivanovich, aspirant; SIUNOV, Nikolay Sergeyevich, doktor tekhn.nauk, prof.

Reaction of the stator of a synchronous machine with split poles. Izv.vys.ucheb.zav.; elektromekh. 7 no.1:24-33 '64.

1. Kafedra elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Anishchenko). 2. Zaveduyushchiy kafedroy elektricheskikh mashin i rektor Ural'skogo politekhnicheskogo instituta (for Siunov).

SIUNOV, N.S., doktor tekhn. nauk, prof.; MIKLYAYEV, M.S., kand. tekhn. nauk

Method for approximating the graph of a transient process in studying a.c. machines using their frequency characteristics. Elektrichestvo no.2:38-42 F '64. (MIRA 17:3)

1. Ural'skiy politekhnicheskiy institut.

PETROV, Valeriy Maksimovich, aspirant; SIUNOV, N.S.

Experimental study of the voltage and current curves of three-phase synchronous generators with single-phase load. Izv.vys.ucheb.zav.; elektromekh. 7 no.1:49-52 '64. (MIRA 17:9)

1. Kafedra elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Petrov).

L 45650-65 EPA(s)-2/EWA(h)/EWT(1)/EWG(m) Pz-6/Peb TT/AT

ACCESSION NR: AP5013165 UR/0144/64/000/012/1422/1427

20
8

AUTHOR: Siunov, N. S.; Rodionov, I. Ye.

TITLE: Experimental determination of the parameters of synchronous hydro-generators under operating conditions

SOURCE: IVUZ. Elektromekhanika, no. 12, 1964, 1422-1427

TOPIC TAGS: electric generator, electric power engineering

Abstract: The article describes a simple method for determining the parameters of a synchronous salient-pole generator on the basis of steady-state operating conditions. The method consists essentially in measuring and plotting a series of V-curves, i.e. I = f(ifield) characteristics at constant voltage for various load points and with simultaneous adjustment of the internal angle, the power factor angle and the airgap EMF. The synchronous reactances in the direct and in the quadrature axes can then be calculated. This method makes it possible to determine the actual saturated values of the parameters and thus eliminates the need for accumulating data of other machines for comparison. In addition, this method when applied to salient-pole machines is more reliable and accurate than other existion methods; it can be used for studying not only steady-state but also transient conditions.

Card 1/2 Orig. art. has 5 figures.

0

ASSOCIATION: none

SUBMITTED: 14Jan64 ENCL: 00 SUB CODE: EE, MA

NO REF SOV: 008 OTHER: 001 JPRS

Card 2/2 mb

ANISHCHENKO, Yevgeniy Ivanovich, assistent; KIRPICHNIKOV, Viktor Mikhaylovich, kand. tekhn. nauk, dotsent; SIUNOV, Nikolay Sergeyevich, doktor tekhn. nauk, prof.

Use of an electric integrator in calculating stray fields of the rotor of a synchronous machine. Izv. vys. ucheb. zav.; elektromekh. 7 no.7:837-847 '64. (MIRA 18:5)

1. Kafedra elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Anishchenko). 2. Zaveduyushchiy kafedroy vychislitel'noy tekhniki Ural'skogo politekhnicheskogo instituta (for Kirpichnikov). 3. Zaveduyushchiy kafedroy vychislitel'noy tekhniki Ural'skogo politekhnicheskogo instituta (for Siunov).

L 01291-67 EWT(1)

ACC NR: AT6010472 SOURCE CODE: UR/2694/64/000/138/0039/0049

AUTHOR: Siunov, N. S.; Anishchenko, Ye. I.

ORG: none

TITLE: Determination of parameters and starting characteristics of a split-pole synchronous motor

SOURCE: Sverdlovsk. Ural'skiy politekhnicheskiy institut, Trudy, no. 138, 1964. Issledovaniye elektromagnitnykh i elektromekhanicheskikh protsessov mashin peremennogo toka (Research on electromagnetic and electromechanical processes in a. c. machines), 39-49

TOPIC TAGS: electric motor, synchronous motor

ABSTRACT: Peculiarities in the calculation of parameters and starting characteristics of a split-pole (double-pole, see AT6010471) synchronous motor are considered. As an example, a motor with 72 stator slots, 2p = 6 rotor poles, and a 2-layer 60°-phase-belt 8-slot-pitch stator winding is used; d- and q-axis parameters are determined. As the stator-winding mmf curve of this machine is closer to the sine wave

Card 1/2

than that of a conventional synchronous machine, the stator leakage reactance is determined by conventional methods. The field-winding leakage reactance is determined with an allowance for the airgap leakage caused by the nonsinusoidal field form. The starting-winding d-axis and q-axis leakage reactances are equal; a formula for this winding resistance is developed. The above parameters are used for plotting the starting characteristics of the motor; these characteristics differ by only 15% or less from the experimental characteristics measured by the braking method. A numerical example with a 280-v, 230-amp motor illustrates the method. Orig. art. has: 6 figures, 13 formulas, and 1 table.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 001

GRUCHIN, M.A.; SHULOV, V.S.

Calculation of additional losses in the steel of machines with dual feed. Trudy Ural. politekh. inst. no. 138:107-115 '64 (MIRA 19:1)

L 01288-67 EWT(1)

ACC NR: AT6010476 SOURCE CODE: UR/2694/64/000/138/0130/0135

AUTHOR: Siunov, N. S.; Kuznetsov, B. A.

ORG: none

TITLE: Allowance for skin effect in cast-aluminum squirrel-cage rotors

SOURCE: Sverdlovsk. Ural'skiy politekhnicheskiy institut, Trudy, no. 138, 1964. Issledovaniye elektromagnitnykh i elektromekhanicheskikh protsessov mashin peremennogo toka (Research on electromagnetic and electromechanical processes in a. c. machines), 130-135

TOPIC TAGS: electric motor, induction motor, skin effect

ABSTRACT: So far, the design of high-starting-torque shaped-conductor deep-slot induction motors has been based on the formulas for copper conductors. At present, some Soviet-made motors (up to 100 kw) have cast-aluminum squirrel cages. The skin effect in aluminum conductors is less pronounced than in copper ones. Hence, a different slot cross-section shape is needed. The article presents formulas and curves (plots of starting parameters vs. slot depth, starting-loss-reduction factor vs. slot depth) for designing high-starting-torque deep-slot induction motors. Orig. art. has: 3 figures and 24 formulas.

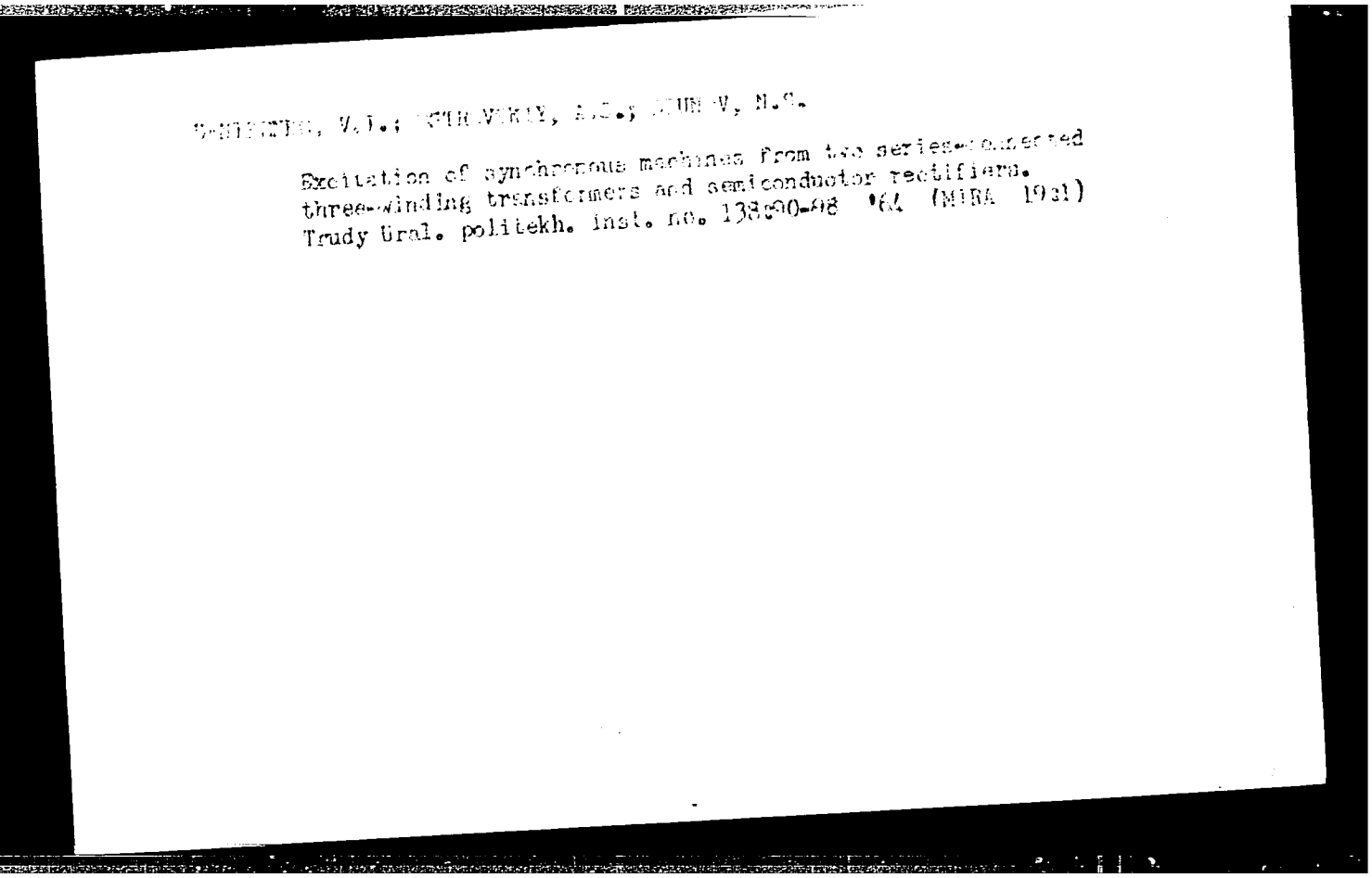
SUB CODE: 09 / SUBM DATE: none / ORIG REF: 003

Card 1/1 mjs

Y/

[illegible], N. [illegible]; [illegible]NIKOV, Yu.A.; MIKLAYEV, M.S.

Consideration of the mutual effect of parameters according to d and q axes in the analysis of salient-pole a.c. machines using a frequency method. Trudy Ural. politekh. inst. no. 138: 14-21 '64 (MIRA 19:1)



[illegible], V.I.; [illegible], A.E.; [illegible], N.S.

Excitation of synchronous machines from two series-connected three-winding transformers and semiconductor rectifiers. Trudy Ural. politekh. inst. no. 138 [illegible] '64 (MIRA 1931)

MILAYKINA, Rimma Nikiforovna, aspirantka; SIUNOV, Nikolay Sergeyevich, doktor tekhn.nauk, prof.

Effect of forced excitation on the selection of the parameters of the control units of self-excited synchronous generators. Izv.vys. ucheb.zav.; elektromekhanika 8 no.6:666-673 '65. (MIRA 18:8)

1. Kafedra elektricheskikh mashin Ural'skogo politekhnicheskogo instituta (for Milaykina). 2. Zaveduyushchiy kafedroy elektricheskikh mashin, rektor Ural'skogo politekhnicheskogo instituta (for Siunov).

ACC NR: AP6019150 (N) SOURCE CODE: UR/0144/66/000/002/0160/0164

AUTHOR: Antishchenko, Ye. I.; Kirpichnikov, V. M.; Siunov, N. S.

ORG: None

TITLE: Criteria for adhesion in synchronous motors

SOURCE: IVUZ. Elektromekhanika, no. 2, 1966, 160-164

TOPIC TAGS: electric motor, harmonic analysis, reliability engineering, HARMONIC FAILURE, ENGINE STARTER SYSTEM

ABSTRACT: Adhesion in synchronous motors occurs where $L_{min} \approx t_1$ ($\gamma_{eff} \cong 1$). In this case the tooth harmonics, which are the cause of adhesion, are largest. The larger γ the smaller the effect of the starting winding slots and the less the tendency of the motor to adhesion. Two conditions are recommended for eliminating adhesion,

$$t_2 > 0{,}8t_1, \quad (1)$$

$$A = \left|(n_c - 1)\left(1 - \frac{t_2}{t_1}\right)\right| > 0{,}75, \quad (2)$$

where t_1 and t_2 are the stator and rotor tooth divisions. The following should be

UDC: 621.313.332.+621.3.044.

Card 1/2

L 09246-67

ACC NR: AP6019230

true for reliable starting of synchronous motors: $\gamma_{eff} > 1.5$ or $\gamma_{av} > 1.8$. Orig. art. has: 4 formulas, 2 figures and 1 table.

SUB CODE: 09/SUBM DATE: 19 Feb 64/ORIG REF: 004

Machine Design

Card 2/2

MALINOVSKI, I., SIUPTITS, P.

Behavior of positive holes in silver bromide.
Izv Inst fiz khim 3: 109-118 '63.

1. Institut po fizikokhimiia pri Bulgarskata akadomiia na naukite.

SIURIN, V.N.; OSIDZE, D.F.; PANTELEYEV, Yu.V.; SUSHKOV, F.V.

Propagation of A2 influenza virus in porcine embryo kidney cell cultures. Acta virol. 7 no.4:378 Jl '63.

1. D.I. Ivanovsky Institute of Virology, U.S.S.R. Academy of Medical Sciences, Moscow.
(INFLUENZA VIRUS) (TISSUE CULTURE)
(KIDNEY) (GLYCOGEN) (VIRUS CULTIVATION)

SIURKUS, T., doc.

Vladas Kuzma -- the pioneer of surgery of the sympathetic nervous system in Lithuania (70th anniversary of his birth). Sveik. apsaug. no.10:43-45 '62.

1. Kauno Valstybinis medicinos institutas.
(NEUROSURGERY) (BIOGRAPHY)
(SYMPATHETIC NERVOUS SYSTEM)

SIUSZKO, A.

"Instructions in commerce are necessary."

p. 4 (Rolnik Spoldzielca) Vol. 10, no. 3, Jan. 1958
Warsaw, Poland

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

SIURKUS, T., doc.

Role of relaxants in anesthesiology. Sveik. apsaug. 7 no.3(75):8-11 Mr '62.

1. Kauno Valst. medicinos institutas.

(MUSCLE RELAXANTS ther) (ANESTHESIA)

L 9032-66 EWT(d)/EWT(m)/EWP(v)/T/EWP(k)/EWP(t)/EWP(h)/EWP(b)/EWP(l)/EWA(c)/ETC(m)
ACC NR: AP5024954 JD/WW/HW/DJ SOURCE CODE: UR/0286/65/000/016/0015/0015

AUTHORS: Siushev, S. Kh.; Romanov, V. V.; Peskin, L. D.

ORG: none

TITLE: Working stand of rolling mill. Class 7, No. 173689 [announced by All-Union Scientific Research and Design and Construction Institute of Metallurgical Machinery Construction (Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut metallurgicheskogo mashinostroyeniya)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 15

TOPIC TAGS: rolling mill, roller adjustment, roller control, METALLURGIC MACHINERY, METALWORKING MACHINE ACCESSORY

ABSTRACT: This Author Certificate presents a working stand of a rolling mill which includes an eccentric compression arrangement and rollers which are shaped for a general part configuration (see Fig. 1). To permit mounting of the rollers at an angle to each other for rolling of unsymmetrical profiles, the pressurizing sections on the left and right sides are made independent of each other but with synchronization of the lower and upper parts of the compression sections. To

Card 1/3

UDC: 621.771.25

3

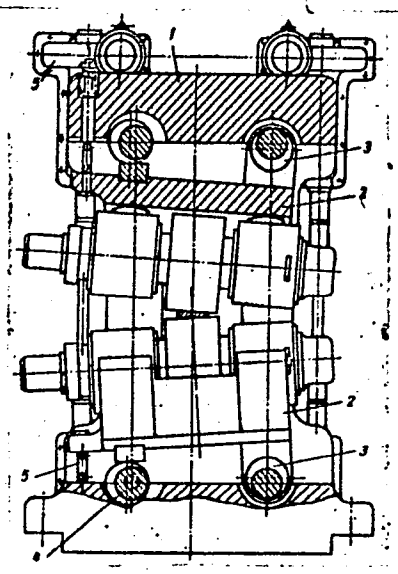


Fig. 1. 1 - Frame; 2 - common bearing; 3 and 4 - compression eccentrics; 5 - drives for eccentrics.

eliminate the need for axial control mechanisms, the upper and lower eccentrics of the compression sections on one side are enclosed in bearings which take both

17

L 9032-66

ACC NR: AP5024954

axial and radial roller loads. Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 20Apr64

Card 3/3

SIUTA, Jan

Remarks on the negative influence of oxygen reduction processes upon the development of plants. Postepy nauk roln 7 no.3:13-20 My-Je '60. (EEAI 9:12)

1. Zaklad Gleboznawstwa IUNG Pulawy
(Oxygen) (Plants)

SIUTA, Jan

On glei soil processes and ferruginous precipitates in the Kazimierz Dolny loess. Przegl geogr 32 no.1/2:113-124 '60. (EEAI 9:10)

1. Zaklad Gleboznawstwa IUNG w Polawach. Pracownia Chemii Gleb.
(Poland--Soils) (Iron) (Loess)

SIUTA, Jan

Preliminary research on gleization processes in the alluvial soils of Zulawy. Roczn nauk roln rosl 82 no.1:45-72 '60.
(KEAI 10:7)

1. Pracownia Chemii Gleb Zakladu Gleboznawstwa Instytutu Uprawy, Nawozenia i Gleboznawstwa w Pulawach.
(Poland--Soils) (Alluvium)

SIUTA, Jan

Gley process, its phenomena and effects. Postepy nauk roln 8 no.2: 41-50 Mr-Ap '61.

1. Zaklad Gleboznawstwa Instytut Uprawy Nawozenia i Gleboznawstwa, Pulawy.

SIUTA, Jan; PARTYKA, Adam

On the situation of loess-type soils and their variability in the South-Eastern part of Poland. Przegl geogr 33 no.3:499-510 '61.

1. Soil Research Laboratory, Institute of Cultivation, Fertilization and Soil Science, Pulawy(Poland).

SIUTA, Jan

Some sandy brown soils of the Mazury Lake Land. Rocz nauk roln rosl 82 no.2:307-323 '61.

1. Zaklad Gleboznawstwa, Szkola Glowna Gospodarstwa Wiejskiego, Warszawa i Zaklad Gleboznawstwa, Instytut Uprawy, Nawozenia i Gleboznawstwa, Pulawy.

[redacted]A, Jan

The absorbing process of brown and podsol soils of the Masurian Lake Land. Rocz nauk roln rosl 82 no.3:563-657 '61.

1. Zaklad Gleboznawstwa, Szkola Glówna Gospodarstwa Wiejskiego, Warszawa.

SIUTA, Jan; GAWEDA, Zygfryd

Origin and chemical composition of the ferroginous soil concretions. Rocz nauk roln rosl 84 no.1:15-34 '61.

1. Pracownia Chemii Gleb Zakladu Gleboznawstwa, Instytut Uprawy, Nawozenia i Gleboznawstwa, Pulawy.

SIUTA, Jan

Influence of periodical anaerobic decay of the organic substance upon the solubility and distribution of mineral components in the soil. Postepy nauk roln 9 no.2:75-88 Mr-Ap '62.

1. Zaklad Gleboznawstwa, Instytut Uprawy, Nawozenia i Gleboznawstwa, Pulawy. Kierownik: prof. dr M. Strzemski.

SIUTA, Jan

The role of oxygen-free fermentation gases in forming the soil surface. Przegl geogr 34 no.1:99-109 '62.

SIUTA, Jan

"Soil cover of the Transcarpathian region" by E.Rudnieva. Reviewed by Jan Siuta. Przegl geogr 34 no.2:417-420 '62.

SIUTA, Jan

Origin of some lithologic and soil deformations. Przegl geogr 34 no.4:679-689 '62.

1. Zaklady Gleboznawstwa, Instytut Uprawy Nawozenia i Gleboznawstwa, Pracownia Chemii Gleb, Pulawy.

SIUTA, Jan; MOTOWICKA, Teresa

Importance of ferreous concrettions for the straitgraphy of certain Quaternary formations. Przegl geogr 35 no.2:199-213 '63.

1. Zaklad Gleboznawstwa, Instytut Uprawy, Nawozenia i Gleboznawstwa, Pulawy.

Soil Science Department Inst. of Cultivation Fertilization and Soil Science

SIUTA, Jan; TERELAK, Henryk

Observations on the formation of modern thufurs in the Vistula Valley. Przegl geogr 35 no.2:215-219 '63.

MARSZALEK, Barbara (Wroclaw); KOWALKOWSKI, Alojzy (Poznan); SIUTA, Jan (Pulawy)

National Polish conference on slopes in Breslau. Czasop geogr 35 no.2:242-245 '64

SIUTA, W. - ZAWA ZKI, J. - CIESLAK, B.

Theoretical and experimental analysis of the mechanical properties of laminated Pakelite. p. 81

PRZEMYSL CHEMICZNY. (Ministerstwo Przemyslu Chemicznego i Stowarzyszenie Naukowo-Techniczne Inzynierow i Techników Przemyslu Chemicznego) Warszawa, Poland. Vol. 38, no. 2, February, 1959

Monthly List of East European Accessions (EEAI) LC, Vol 8, no. 8, August, 1959 Uncl.

ZAWADZKI, Jerzy, doc., dr., inż.; SIUTA, Władysław, mgr., inż.

Viscous flow through a capillary tube. Mechanika Wrocław 6 no. 43:129 [illegible] '61.

1. Kierownik Katedry Mechaniki Technicznej Politechniki Wrocławskiej, Redaktor Zeszytu "Mechanika" (for Zawadzki).

2. Katedra Mechaniki Technicznej Politechniki Wrocławskiej (for Siuta).

OKOLOW, Bronislaw, mgr., inz.; CIESLAR, Boguslaw, mgr., inz.; SIUTA, Wladyslaw, mgr., inz.; MURZYNSKI, Zdzislaw, mgr., inz.

Approximate computation of a nonmetrically loaded circular cylinder shell. Przegl mech 20 no.21:654-656 '61.

1. Politechnika Warszawska.

(Cylinders) (Approximate computation)

SIUZDAK, Jozef, dr inz.

Well drilling with the mole drainer. Gosp wodna 23 no.7: 262-264 Jl '63.

1. Politechnika, Gdansk.

SIUMIAK, Jozef, dr inz.

Influence of the test of the pumping on the output of a well. Gaz woda techn sanit 37 no.1:10-11 Ja '63.

1. Technical University, Gdansk.

[illegible], Jozef

Analysis of the main factors influencing the capacity of drilled wells. Biuletyn wodno Gdansk no.4:3-33 '62.

1. Technical University, Gdansk.

S/276/63/000/001/001/028
A006/A101

AUTHOR: Siuzdak, Zygmunt

TITLE: Developing technological processes of group treatment

PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, no. 1, 1963, 6, abstract 4B14 ("Mekhanik", v. 35, no. 7, 366 - 370 , Polish)

TEXT: The author analyzes an example of group techniques for treatment of gears, developed by the members of the technical department at the Institute for the Organization of the Machinebuilding Industry (Poland), to be introduced at the plant. The process is divided into 2 stages 1) analysis and preliminary calculations 2) developing the operational documentation. During the first stage, the parts are distributed to form groups, including blanks of equal or similar diameters; of the same material, and having analogous shapes of the surfaces to be treated. During the second stage technical charts are plotted; the equipment, the operational order, machinery and tools are selected. The author presents examples of technical charts, a classifier, diagrams of gears, included into the group,

Card 1/2

SIUZDAK, Z., mgr inz.

"Group methods of machining machine parts" by A.J. Bielczenko, G.G. Jacenko. Reviewed by Z. Siuzdak. Mechanik 35 no.11:633 N '62.

K-8

CZECHOSLOVAKIA/Optics - Optical Methods of Analysis

Abs Jour : Ref Zhur - Fizika, No 8, 1958, No 19286

Author : Sivacek Miroslav
Inst : Not Given
Title : Spectral SemiOmicroanalysis of Welded Seams

Orig Pub : Zvaranie, 1957, 6, No 12, 364-366

Abstract : No abstract

Card : 1/1

46

POLYANSKIY, I.; TVERDOKHLEB, G.; SIVACH, P.

Productivity of grain dryers has been increased. Muk.-elev.prom.22 no.5: 25-26 My '56. (MIRA 9:9)

1.Shchuchinskaya realizatsionnaya baza Zagotzerno.
(Grain--Drying)

L 32224-65 EWP(e)/EWT(m)/EPF(c)/EPF(n)-2/EWP(t)/EWP(k)/EWP(b) Pr-4/Pu-4/Pf-4

ACCESSION NR: AP4046748 IJP(c) JD S/0226/64/000/005/0071/0076

29
28
B

AUTHOR: Sivachek, M.

TITLE: Method of activating sintering by using chlorine

SOURCE: Poroshkovaya metallurgiya, no. 5, 1964, 71-76

TOPIC TAGS: sintering, activator, halogen, hydrochloric acid

ABSTRACT: The author reviews a number of papers dealing with the possibility of intensifying the changes in the density and the physical properties of compacts by the use of additional chemical methods. The author proposes to divide these methods into those in which the activators remain in the sintered product and those in which they are eliminated from the latter. A gaseous medium, the charge and the compacts may serve as a source of activation. A further subdivision of sintering activators is proposed according to their use before or during the sintering process. Activation methods may also be classified according to the composition of the activators. The mechanism of the action of chlorine and its com-

Card 1/2

L 32224-65
ACCESSION NR: AP4046748

pounds on the sintering of metal and non-metal powders remains to be investigated. Apparently, the formation of active metal atoms with a high reserve of free energy may be considered as the basic mechanism that intensifies diffusion as well as other processes that occur during sintering. At the same time, an important role is attributed to the passing of the material through a gaseous phase and to the pickling effect of certain agents that contain chlorine on the surface of particles being sintered. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Issledovatel'skiy institut svarki, ChSSR, Bratislava (Welding Research Institute 'ChSSR)

SUBMITTED: 12Dec63 ENCL: 00 SUB CODE: MM

NR REF SOV: 016 OTHER: 006

Card 2/2

SIVACHEK, M. [Sivacek, M.]

Methods of activated sintering with the use of chlorine. Porosh.met. 4 no.5:71-76 S-O '64. (MIRA 18:10)

1. Issledovatel'skiy institut svarki Chekhoslovatskoy Sotsialisticheskoy Respubliki, Bratislava.

SIVACHEK, N.I.; DEMCHENKO, V.F.; KRYMSKIY, I.I.; RYSHCHENKO, A.V.

Mechanizing the operation of shaft grates. Sbor.rats.predl. vnedr.v proizv. no.5:5-8 '60. (MIRA 14:8)

1. Trest "Dzerzhinskruda", rudoupravleniye "Ingulets".
(Mining machinery--Technological innovations)

SIVACHENKO, I.Yu.

Prospects for the development of the fruit and vegetable canning industry in the southern districts of the Ukraine. Konz. i ov. prom. 13 no.7:38-39 Jl '58. (MIRA 11:6)
(Ukraine--Canning industry)

SIVACHENKO, T. P., Cand Med Sci -- (diss) "Effect of neurotropic substances and phosphorus loading upon elimination of radioactive phosphorus from the organism." Kiev, 1957. 12 pp (Acad Sci Ukr SSR, Department of Biol Sci), 100 copies (KL, 2-58, 116)

Sivachenko, T.P.

The effect of caffeine, phenamine, nembutal, and of sodium amytal on the elimination of radioactive phosphorus from the organism. T. P. Sivachenko. *Fiziol. Zhur., Akad. Nauk Ukr. R.S.R.* 3, No. 1, 103-9(Russian summary, 109-10; English summary, 110)(1957).—The expts. were performed with 280 4-5-month-old white male rats weighing about 170 g. The rations consisted of oats, milk, bread, and water. The rats were kept in individual metabolism type of cages, provision being made for the collection of the urine and the feces. Each rat was injected intraperitoneally with P^{32} at the rate of 0.020 mc./rat, a dose which was found to be easily tolerated by the rats and which had practically no unfavorable effects on the rats. The results indicated that the mean total elimination of P^{32} at the end of 5 days following its injection was 31.9% of the injected dose, of which 25.9% was eliminated in urine and 2.4% in the feces. During the next 5 days the av. of the eliminated radioactive P was 1.7% per day. Caffeine in doses of 0.3 mg./100 g. of rat body wt., administered 2 hrs. after the injection of the P^{32} and continued at that rate for 10 consecutive days, increased the rate of the P^{32} elimination by 4.7%. Phenamine injected in doses of 0.06 mg./100 g. of rat body wt. in a manner similar to the injection of the caffeine increased the rate of the P^{32} elimination by 7.4%. Nembutal administered at the rate of 2 mg./100 g. of rat body wt. and Na amytal at the rate of 0.08 mg./100 g. of rat body wt. administered similarly, but for five consecutive days, retarded the elimination of the P^{32} by 5%. No appreciable changes were observed in the accumulation rate of P^{32} in the tissues following the administration of caffeine, phenamine, nembutal, or Na amytal. B. S. I.

COUNTRY : USSR
[illegible] : Pharmacology, Toxicology. Different Preparations

[illegible] : Referat. Zh., No. 12 1958, No. 56761

AUTHOR : Sivachenko, L.P.
INST. : -
TITLE : The Elimination of Radioactive Phosphorus (P^{32}) from the Rat under the Influence of Vitamins D_2 and E, Parathyroid Hormone, and Diurethine

ORIG. PUB. : Fiziol. Zh., 1957, Vol.3, No.3, 105-111

ABSTRACT : Vitamin D_2 per os in a daily dose of 2000 units in the course of five days hastens the excretion of P^{32} from the body of the rat by about 4.3%, and vitamin E has an accelerating effect of about 8% when given in a daily oral dose of 0.1 ml per os, for 5 days. E influences the distribution of P^{32} in the organs and tissues of the rat. In the spleen, liver, kidneys, and brain of the experimental rats, the percentage accumulation of P^{32} is less than in the control rats. Parathyroid hormone (I), given intramuscularly in a daily dose of 0.5 ml for 5 days, hastens the elimination of P^{32} by 5%.

Card: 2/2

GORODETSKIY, Aleksey Afanas'yevich, prof.; SIVACHENKO, Tamara Porfir'yevna; KHOMUTOVSKIY, Otton Al'fredovich; RYABOVA, Era Zinov'yevna; CHEBOTAREV, Ye.Ye., red.; GITSHTEYN, A.D., tekhred.

[Excretion of some radioactive substances from the body] Vyvedenie iz organizma nekotorykh radioaktivnykh veshchestv. Kiev, Gos. med.izd-vo USSR, 1959. 199 p. (MIRA 13:3)

1. Chlen-korrespondent AN USSR (for Gorodetskiy).
(RADIOACTIVE SUBSTANCES--TOXICOLOGY)

SIVACHENKO, T.P. [Syvachenko, T.P.]

Effect of a phosphorus load on the elimination of radioactive phosphorus from the organism. Fiziol.zhur. [Ukr.] 5 no.3: 386-392 My-Je '59. (MIRA 12:10)

1. Institut fiziologii im. O.O.Bogomol'tsya AN URSR, laboratoriya biofiziki i Kiivs'kiy institut udoskonalennya likariv, kafedra medichnoi radiologii.
(PHOSPHORUS IN THE BODY)

SIVACHENKO, T.P., dotsent

Absorption of radioactive iodine (I^{131}) by the thyroid gland in hypertension following biotron treatment. Vrach. delo 4:27-30 Ap '62. (MIRA 15:5)

1. Kafedra meditsinskoy radiologii (zav. - prof. N.F.Lipkan) i kafedra nervnykh bolezney (zav. - zasluzhennyy deyatel' nauki, prof. D.I. Panchenko) Kiyevskogo instituta usovershenstvovaniya vrachey.
(IODINE—ISOTOPES) (THYROID GLAND)
(HYPERTENSION) (CLIMATOLOGY, MEDICAL)

SIVACHENKO, T.P.; SLAVNOV, V.N.

Use of radioactive iodine in the treatment of thyrotoxicoses. (MIRA 16:2)
Klin.khir. no.11:58-62 N '62.

1. Kafedra meditsinskoy radiologii (zav. - prof. N.F. Lipkan) Kiyevskogo instituta usovershenstvovaniya vrachey.
(THYROID GLAND—DISEASES) (IODINE—ISOTOPES)

SLAVNOV, V.N.; SIVACHENKO, T.P.

Determination of the functional state of the thyroid gland with the DSU-61 type diagnostic scintillation apparatus. Med.rad. no.1:36-38'63. (MIRA 16:10)

1. Iz kafedry meditsinskoy radiologii (zav. - prof. N.F.Lipkan) Kiyevskogo instituta usovershenstvovaniya vrachey.
(IODINE ISOTOPES) (THYROID GLAND)
(SCINTILLATION COUNTERS)

SLAVNOV, V.N., kand.med.nauk; SIVACHENKO, T.P., dotsent

Use of the new DSU-61 diagnostic scintillation device for determining the functional state of the thyroid gland. Vrach.delo no.1: 79-83 Ja '63. (MIRA 16:2)

1. Kafedra meditsinskoy radiologii (zav. - prof. N.F. Lipkan) Kiyevskogo instituta usovershenstvovaniya vrachey.
(THYROID GLAND)
(DIAGNOSIS, RADIOSCOPIC--EQUIPMENT AND SUPPLIES)

SIVACHENKO, T.P.; SLAVNOV, V.N.

Functional state of the thyroid gland in thyrotoxicosis at various periods following radioactive iodine therapy. Med. rad. 8 no.2:5-10 F'63 (MIRA 16:11)

1. Iz kafedry meditsinskoy radiologii (zav. - prof. N.F. Lipkan) Kiyevskogo instituta usovershenstvovaniya vrachey.

SIVACHENKO, T.P.;SLAVNOV, V.N.

Immediate and late results of the treatment of thyrotoxicosis. (MIRA 17:4)
Med. rad. 8 no.9:20-25 S'63.

1. Iz kafedry meditsinskoy radiologii (zav. - prof. N.F. Lipkan) Kiyevskogo instituta usovershenstvovaniya vrachey (rektor - dotsent N.N. Umovist).

SIVACHENKO, T.P., dotsent

Diagnostic value of the method of determining the functional state of the thyroid gland (by absorption of radioactive iodine). Vrach. delo no.10:68-72 O '63. (MIRA 17:2)

1. Kafedra meditsinskoy radiologii (zav. - prof. N.F. Lipkan) Kiyevskogo instituta usovershenstvovaniya vrachey.

SLAVNOV, V.N.; SIVACHENKO, T.P.

Determination of protein-bound iodine in thyrotoxicosis treated with radioactive iodine. Med. rad. 8 no.12:21-25 D '63.
(MIRA 17:2)

1. Iz kafedry meditsinskoy radiologii (zav. - prof. N.F. Lipkan) Kiyevskogo instituta usovershenstvovaniya vrachey.

SIVACHENKO, T.P.

Functional status of the thyroid gland following irradiation with fast neutrons. Med. rad, 9 no.8:28-31 Ag '64. (MIRA 18:4)

1. Kafedra meditsinskoy radiologii (zav. - prof. N.F.Lipkan) Kiyevskogo instituta usovershenstvovaniya vrachey, laboratoriya radiatsionnoy zashchity (zav. Ye.Ye. Chebotarev) i laboratoriya tkanevoy dozimetrii (zav. B.R.Kirichinskiy) Instituta fiziologii AN UkrSSR.

L 54652-65

ACCESSION NR: AT5014959 UR/0000/65/000/000/0052/0058

AUTHOR: Sivachenko, T. P. 87 B+1

TITLE: The functional state of the adrenal cortex during irradiation with fast neutrons

SOURCE: AN UkrSSR. Institut fiziologii. Biologicheskoye deystviye neytronnogo izlucheniya (Biological effect of neutron radiation). Kiev, Naukova dumka, 1965 52-58

TOPIC TAGS: fast neutron, neutron radiation, adrenal cortex, ascorbic acid, ACTH, biological effect, rat

ABSTRACT: The effect of neutron irradiation on the functional condition of the adrenal cortex was studied by determining the amount of ascorbic acid in the adrenals, eosinophils in the blood, and 17-ketosteroids in the urine. Male white rats weighing 120—150 g were irradiated with neutrons (doses 175, 200, and 300 rad) and then examined one day and ten days after irradiation. Experiments show that irradiation with fast neutrons alters the content of ascorbic acid and dehydro-ascorbic acid in adrenal tissue (see Table 1 of the Enclosure). According to the literature, the amount of ascorbic acid is an index of the functional state of the

Card 1/3

L 54652-65

ACCESSION NR: AT5014959

adrenal cortex. Thus, stimulation of the adrenal function is observed soon after irradiation with these doses. Other indications of stimulation of the adrenal cortex in the first days after irradiation are a decrease in the amount of ACTH, an insignificant increase of steroids in the urine, and a decrease in the amount of eosinophils. Ten days after irradiation, however, depression of the activity of the adrenal cortex was noted, the content of ascorbic acid had been restored, and the amount of steroids had decreased. However, the number of eosinophils had not returned to the initial level at the end of the experiment. It was concluded that the adrenal cortex reacts to LD_{50} neutron irradiation and lethal doses (300 rad). [JS]
Orig. art. has: 5 figures and 4 tables.

ASSOCIATION: Kiyevskiy institut usovershenstvovaniya vrachey (Kiev Institute for Advanced Training of Physicians); Institut fiziologii im. A. A. Bogomol'tsa AN UkrSSR (Institute of Physiology, AN UkrSSR)

SUBMITTED: 22Feb65 ENCL: 01 SUB CODE: LS

NO REF SOV: 011 OTHER: 004 ATD PRESS: 4026

L 54652-65

ACCESSION NR: AT5014959

ENCLOSURE: 01

Table 1. Content of ascorbic acid and dehydroascorbic acid in the adrenals of rats before irradiation and 24 hr after irradiation with neutrons (doses of 175 and 300 rad)

Dose, rad	Before irradiation		After irradiation	
	Initial content		After 24 hr	
	ascorbic acid, mg%	dehydroascorbic acid, mg%	ascorbic acid, mg%	dehydroascorbic acid, mg%
175	186	26.6	108.7	81.3
300	123	31	113	15

Card 3/3

L 54653-65
ACCESSION NR: AT5014960 UR/0000/65/000/000/0059/0061

AUTHOR: Sivachenko, T. P.; Estrin, I. M.

TITLE: Morphological changes in some organs of white rats due to neutron irradiation

SOURCE: AN UkrSSR. Institut fiziologii. Biologicheskoye deystviye neytronnogo izlucheniya (Biological effect of neutron radiation). Kiev, Naukova dumka, 1965, 59-61

TOPIC TAGS: neutron irradiation, biological effect, fast neutron, radiation injury, RBE, rat

ABSTRACT: Morphological changes in selected organs of white rats were studied after various doses of neutron irradiation. Thirty-two male white rats, weighing 110—140 g, were irradiated with fast neutrons in a specially equipped nuclear reactor (lethal dose- 300 rad; sublethal doses- 175 and 200 rad). Symptoms of radiation sickness in rats subjected to a sublethal radiation dose (200 rad) included noticeable sluggishness, diarrhea, and in half the animals, rhinitis, conjunctivitis, and loss of weight. Adynamia, loss of appetite, and then diarrhea and weight loss preceded the death (on the 9th day) of animals exposed to a lethal radiation dose. Macroscopic examination showed irregular blood supply in internal organs and some focal hemorrhages in subcutaneous tissue and the lungs. Miscroscopic examination revealed

Card 1/3

changes in brain tissue (edema, hemorrhages of small blood vessels, vacuolation of ganglionic cells, and cirrhosis). Three days after irradiation, reticular cells and megakaryocytes appeared in the bone marrow, and there was a decrease in the differentiation of red and white cells. By the tenth day, pathological changes included severe destruction of the bone marrow, focal hemorrhages, and small focal accumulations of plasma. Disintegration of lymphocytes occurred in the lymph nodes and the spleen. Plethora, recent hemorrhages, and focal proliferation of cells in interveolar septa were observed in the lungs. In the gastrointestinal tract, edema of the submucosa occurred with subsequent enrichment of the mucous membrane with plasma. Irregular blood supply, dystrophy, and then focal proliferation of Kupffer cells were noted in the liver. Hyperemia, swelling or shrinkage of some chromophil cells, and turbidity of their protoplasm were observed in the hypophysis of the pituitary gland. Hyperemia, vacuolation of the epithelium, and a decrease in the follicular dimensions were among the changes observed in the thyroid gland. In the adrenal glands, hemorrhages and disintegration of nuclei in cells of the reticular zone were noted. Plethora and focal dystrophic changes were observed in the testes. Experimental data indicate that, in general, changes in several organs of rats subjected to neutron irradiation correspond to changes during other types of irradiation. Unusual changes with neutron irradiation are proliferation of cells in the interalveolar septa of the lungs and proliferation of Kupffer cells in the liver. In both cases metabolic disturbances may be responsible for the changes. [JS]