Movanson, P. P., Gutma, b. P.   SOV/20-121-5-4/59

TITLE: Influence of an Experimental Heart Lesion Upon the Electro-
                encephalogram (Vliyanie eksperimental'nogo poroka serdtsa
                na elektroentsefalogrammu)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 5, pp. 940-943
                (USSR)

ABSTRACT: The first author proved in earlier papers, that a preceding
                removal of the vertebral cortex causes deviations in the com-
                pensatory transformation of the remaining kidney after
                nephrectomy (Ref 1), further in the same transformation of
                the heart at an experimental heart defect (Ref 2). Inspite
                of these deviations the said transformation proceeds and
                guarantees the survival of the animals. At a comparison of
                these facts with information presented in references 3-6 it
                was presumed that the share of the cortex in the compensation
                is considerably smaller than its share in the compensation
                of motoric disturbances. For the purpose of a further study of
                this problem the authors carried out the present investigations
                on rabbits. The electroencephalogram (EEG) was twice recorded
Card 1/3   from 18 animals. Then an aortic stenosis was caused in 14

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animals (Ref 2). After 1, 2, 3, 4 and 14 days the EEG was taken again. The control animals did not show any change of the EEG (Fig 1). The animals with heart defect (Fig 2) showed a considerably changed background-EEG (fonovaya EEG). 1-3-4 days after the provocation of the heart defect the EEG of the premotoric-motoric and optical zone showed an obliterate appearance. All frequency amplitudes were reduced. This was proved by experiments with a frequency-analyser. After 14 days the EEG from 14 animals with a heart defect was normal again. With two other animals the EEG remained as on previous days. Similar changes of the EEG are caused under bromine and ether influence (Fig 3), as well as by muectiform damage of the cortex (Ref 3). The phenomena of inhibition in the cortex in animals with a heart defect could either be caused by insufficient blood supply of the brain or in consequence of the changed composition of the afferent signalization. In accordance with references 10 and 11, however, there is no indication for a reduced blood supply. It is conceivable without doubt that the irritation of the centers of the medulla oblongata and of the hypothalamus occurring during the

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Influence of an Experimental Heart Lesion Upon the Electroencephalogram

emergency period of the compensatory transformation causes
signs of inhibition in the cortex either by means of negative
induction (Ref 19) or by means of the reticular-cortical
mechanism (Ref 20, 21). There are 3 figures and 22 references,
17 of which are Soviet.

ASSOCIATION: Tsentral'nyy institut usovershenstvovaniya vrachey
               (Central Institute for Advanced Training of Physicians)

PRESENTED: March 19, 1958, by L. A. Orbeli, Member, Academy of Sciences,
               USSR

SUBMITTED: March 18, 1958

Card 3/3

RUTSAY, S.V.

Mechanism of the central effect of hypertensin and pituitrin.
Trudy Inst. norm i pat. fiziol. AMN SSSR 6:116-117 '62
                                                (MIRA 17:1)

1. Laboratoriya fiziologii i patofiziologii serdechnoy deyatel'-
nosti (zav. - deystvitel'nyy chlen AMN SSSR prof. V.V Parin)
Instituta normal'noy i patologicheskoy fiziologii AMN SSSR.

MEYERSON, F.Z.;RUTSAY, S.V.

Effect of experimental heart lesions on the electroencephalogram.
Dokl. AN SSSR 121 no. 5:940-943 Ag '58.   (MIRA 11:10)

1. TSentral'nyy institut usovershenstvovaniya vrachey. Predstavleno
akademikom L.A.Orbeli.
                    (ELECTROENCEPHALOGRAPHY)
                        (HEART--DISEASES)

45266

Z/037/62/000/005-6/015/049

E192/E382

84.2120

AUTHOR: Rutscher, A.

TITLE: Influence of stepwise ionization on the positive column in low-pressure discharges

PERIODICAL: Ceskoslovensky casopis pro fysiku, no. 5-6, 1962, 521 - 529

TEXT: Recent measurements of electron temperatures in neon show that at high currents in small-diameter tubes the temperatures are considerably lower than the values expected on the basis of the simple diffusion theory. Secondly, even when the concentration of particles on the walls of the tube and the dependence of the ion mobility on the field are taken into account, the calculated temperatures are still too low. Consequently, the influence of metastable atoms (stepwise-ionization mechanism) is investigated. The metastable atoms in the state s_5 and the atoms at the resonant level s_4 have the highest concentration in a neon discharge. The concentration m of the atoms in the state s_5 can be expressed by:

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Influence of stepwise ....

$$Z/037/62/000/005-6/015/049$$
$$E192/E382$$

$$\frac{M}{P_o} = \frac{n_e a}{a + n_e s} \tag{1}$$

where P_o is the gas pressure at 0 °C, n_e is the mean electron concentration, z is the excitation path for an electron collision, a is the effective loss frequency and s is the effective loss ratio for electron collisions. The following formula is valid above the saturation current:

$$M/P_o = z/s \tag{2}$$

The equation for calculating the electron temperature for the currents above saturation is:

$$z_d + \frac{M}{P_o} z_s = \frac{\lambda_1^2 kb_p U_e}{(1 + H)^2 (r_o P_o)^2} \tag{3}$$

where z_d is the number of direct electron ionizations per sec, z_s is the number of stepwise ionizations per sec, λ_1 is the first zero of the Bessel function of the zero order, k is a
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                                              E192/E382

correction factor depending on the ion mobility b_p, U_e is the voltage equivalent of the electron temperature, H^p is a correction factor for the finite carrier concentration at the walls of the tube and r_o is the radius of the tube. If the quantity z_s in Eq. (3) is known (or assumed), it is possible to determine the dependence of U_e on $r_o p_o$. The value of z_s was determined for a particular discharge ($p_o = 2$ tor, $r_o = 1$ cm, $I = 0.2$ A and $U_e = 1.84$ V) by using Eq. (3) and the electron temperature was measured by probes. In this way, the following expression was obtained:

$$z_s \approx 1.5 \cdot 10^{-8} U_e^{1/2}(4.9 + 2U_e)e^{-4.9/U_e} \text{, cm}^3 \text{s}^{-1}$$

which should be valid for other discharges. The equation for calculating the strength of the longitudinal field is also derived. The above formulae are valid for the currents above saturation and for the atoms in the states s_4 and s_5. As regards the region of low currents, this was studied by m e a s u r i n g the concentrations of particles.
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Influence of stepwise Z/037/62/000/005-6/015/049
                                    E192/E382
There are 7 figures.
ASSOCIATION: Fysikalní ústav university v Greifswaldu, Greifswald
                 (Physics Institute of Greifswald University
                 (Germany))

Card 4/4

BOISSONNAS, R.A.; GUTTMANN, S.; HUGUENIN, R.L.; JAQUENOUD, P.A.;
    RUTSCHMANN, J.

Syntheses of new analogues of oxytocin and vasopressin, Coll Cz Chem
27 no.9:2255 S '62.

1. Sandoz Ltd., Basel, Switzerland (for Rutschmann).

RUTSHNYY, B.A., inzh.

Noncontact magnetic relay with an automatic change of the feedback coefficient. Priborostroenie no.7:14-15 Jl '65.   (MIRA 18:7)

BARANOV, B.K.; RUTSHTEYN, A.M.

Electric circuits of single-phase d.c. locomotive motors with
independent excitation. Sbor. nauch. trud. EINII 2:106-115 '62.
(MIRA 16:8)

(Electric railway motors)

RUTSHTEYN, Arnol'd Maksovich, inzh.

Methods for improving the static characteristics of a.c. electric locomotives. Izv. vys. ucheb. zav.; elektromekh. 6 no.3:381-389 '63.
(MIRA 16:5)

1. Rukovoditel' gruppy otdela perspektivnykh konstruktorskikh razrabotok Novocherkasskogo nauchno-issledovatel'skogo instituta elektrovozostroyeniya.
(Electric locomotives)

RUTSKIY, A.V.; BREYGIN, Ye.Ya.

Use of a three-bladed nail in fractures of the femoral neck. Zdrav.
Belor. 5 no.12:44-45 D '59.   (MIRA 13:4)

1. Iz kafedry ortopedii i travmatologii (zav. kafedroy - prof. V.O.
Marks) Belorusskogo instituta usovershenstvovaniya vrachey (ispol-
nyayushchiy obyazannosti direktora - dotsent N.F. Pavlov), na baze
Minskoy oblastnoy klinicheskoy bol'nitsy (glavnyy vrach - G.A.
TSgoyev).
                    (HIP JOINT--FRACTURE)

SINEL'NIKOV, Dmitriy Yefimovich; RUTSHTEYN, Arnol'd Maksovich

Starting single-phase short-circuited motors with high
starting momentum without using capacitors. Izv.vys.ucheb.
zav.; elektro-mekh. 3 no.1:99-109 '60.

(MIRA 13:5)

1. Starshiy inzhener vychislitel'nogo tsentra Rostovskogo
gosudarstvennogo universiteta (for Sinel'nikov). 2. Nachal'nik
Laboratorii Novocherkasskogo elektrovozostroitel'nogo nauchno-
issledovatel'skogo instituta (for Rutshteyn).
            (Electric motors--Starting devices)

RUTSHTEYN, A.M.

Electromagnetic voltage stabilizing devices for the auxiliary
machinery system of electric locomotives. Sbor. nauch. trud.
ElNII 3:104-112 '63.   (MIRA 17:4)

RUTSHTEYN, D.

The curriculum is an obligatory document! Prof.-tekh.obr. 19
no.3:29-30 Mr '62.   (MIRA 15:4)

1. Glavnyy apetsialist po mashinostroyeniyu Gosudarstvennogo komiteta
Soveta Ministrov SSSR po professional'no-tekhnicheskomu obrazovaniyu.
        (Mechanical engineering--Study and teaching)

BARANOV, B.K., inzh.; RUTSHTEYN, A.M., inzh.

Use of static electromatnetic systems for the rolling stock of
electric railroads. Zhel. dor. transp. 46 no.1:31-33   Ja '64.
                                            (MIRA 17:8)

S/144/60/000/01/012/019
B194/B155

AUTHORS: Sinel'nikov, D.Ye., Senior Engineer, and
           Rutshteyn, A.M., Head of the Laboratory

TITLE: High-torque Starting of Single-phase Squirrel-cage
           Motors without using Capacitors

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
           Elektromekhanika, 1960, Nr 1, pp 99-109 (USSR)

ABSTRACT: Auxiliary equipment on single-phase locomotives may be
           driven by three-phase induction motors using a phase-
           splitter, by capacitor-start induction motors, or by
           induction motors started by means of ohmic resistance in
           the stator circuit.   The first of these methods is
           complicated, and the second requires large capacitors;
           the third method is probably the best for use on
           locomotives.   The present article describes a circuit
           for starting squirrel-cage induction motors from a single-
           phase supply by means of ohmic resistance introduced into
           one 'phase' of the stator winding.   The correctness of
           the theoretical considerations was confirmed by tests on
           a motor.   The magnetic field of a motor considered as
           the source of the torque may be resolved into two fields

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S/144/60/000/01/012/019
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High-torque Starting of Single-phase Squirrel-cage Motors without using Capacitors

rotating in opposite directions: then the torque may be considered as the resultant of two torques, one rotating in each direction. To increase the resultant torque the positive torque may be increased or the negative reduced. The resultant torque would be expected to be greatest when the negative torque is zero. A two-phase squirrel-cage induction motor started by means of the circuit of Fig la is then considered. The single-phase pulsating field is resolved into two rotating fields turning in opposite directions, and Eqs (1) and (2) are derived for the case when the negative field is zero. The formulae derived include a parameter K which is the ratio of the 'phase' voltage in the second winding to that in the first; it is positive for the circuit of Fig la. There is also a parameter R, which is the starting resistance in the 'phase' (1). The determination of these parameters is next considered. To simplify the procedure the two-phase motor is compared with an equivalent three-phase motor shown diagrammatically

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High-torque Starting of Single-phase Squirrel-cage Motors without using Capacitors

      in Fig 2, and finally expressions (15) and (16) are derived for K and R respectively. The vector diagram of a two-phase motor for the condition of starting is then constructed, as in Fig 3, and the permissible starting voltage, which is limited by the permissible load current, is determined from Eq (17). The influence of harmonics of the air-gap field on the acceleration of a two-phase motor during resistance starting is then considered: Eq (23) is derived for the ratio of the maximum torque to the maximum starting torque. A worked numerical example is then given. It concerns a two-phase motor started by the resistive circuit, as shown in Fig 1. The motor was adapted from a standard three-phase induction motor type AS-81-6? by rewinding in accordance with the diagram given in Fig 5. The main characteristics of the two-phase motor are given and its circle diagram is constructed in Fig 4. Test curves of torque as a function of slip are given in Fig 6; curve 1 was taken with the motor loaded by a

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High-torque Starting of Single-phase Squirrel-cage Motors without using Capacitors

generator, using the circuit of Fig 1a, and curve 2 with the two phases connected in series to a 220 V supply. For comparison the graph includes curves of torque as a function of slip taken for a symmetrical three-phase motor type AS-81-6. Of these, curve 3 relates to a symmetrical three-phase start, and curve 4 to the use of one of the phase windings as a starter winding by connecting it to the supply through a resistance. It is concluded that a motor can be started satisfactorily by the resistive circuit of Fig 1a and that by adapting a three-phase motor in the way described, very high starting torques will be obtained. The improvement in starting torque is, however, accompanied by a deterioration in the winding coefficient for the fundamental frequency of the motor field. Since the two windings are displaced by an angle other than 90 degrees, it is necessary to take such measures as reducing the stator winding pitch and slot skewing in order to reduce the influence of higher harmonic of the magnetic field on the torque curves.

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S/144/60/000/01/012/019
E194/E155

High-torque Starting of Single-phase Squirrel-cage Motors without using Capacitors

Tests on a specially-designed motor gave a starting torque practically as calculated, and the higher harmonics had no influence on the torque curve. There are 6 figures, no tables, no references.

ON: Vychislitel'nyy tsentra, Rostovskiy gosudarstvennyy universitet (Computing Centre, Rostov State University) (Sinel'nikov, D.Ye.)

Novocherkasskiy elektrovozostroitel'nyy nauchno-issledovatel'skiy institut (Novocherkassk Electric Locomotive Scientific Research Institute) (Rutshteyn, A.M.)

October 23, 1959

RUTSHTEYN, D.N., otvetstvennyy za vypusk

[Study programs for training general metal cutters in trade, mining, and railroad schools] Uchebnye programmy dlia podgotovki v remeslen- nykh, gornopromyshlennykh i zheleznodorozhnykh uchilishchakh fre- zerovshchikov po metallu (na universal'nykh rabotakh). Moskva, Vses. uchebno-pedagog. izd-vo Trudrezervizdat, 1956. 37 p.   (MIRA 11:3)

1. Russia (1923-   U.S.S.R.) Glavnoye upravleniye trudovykh rezervov. Uchebno-metodicheskoye upravleniye.
        (Metal cutting--Study and teaching)

RUTSHTEYN D.N.

RUTSHTEYN, D.N., otvetstvennyy za vypusk

[Training of adjusters of automatic and semiautomatic lathes
in engineering schools; programs] Programmy dlia podgotovki v
tekhnicheskikh uchilishchakh naladchikov tokarnykh avtomatov i
poluavtomatov. Moskva, Vses. uchebno-pedag. izd-vo Trudrezervizdat,
1957. 55 p.   (MIRA 11:3)

1. Russia (1923-   U.S.S.R.) Glavnoey upravleniye trudovykh
rezervov. Uchebno-metodicheskoye upravleniye.
        (Machine-shop practice—Study and teaching)

RUTSHTEYN, D. S., POPOV, L. V., and IOFFE, L. M.

"Stroboscopic Temperature Measurement of AC Current Arc," Uch. zap. Kazansk, un-ta, 113, 9, 1953, pp 111-117

The temperature of an ac arc discharge was measured from intensities of CuI and FeII lines and from the rotational structure of the OH 3064° A band. Different temperature values were found, depending on which line was used, for computation. It was concluded that the temperature of the arc is low at the beginning and end of the discharge and reaches its maximum in the middle of the flare (RZhFiz, No 7, 1955) SO: Sum.No. 713, 9 Nov 55

Rutshteyn, E.M.

AUTHORS: Rozina, A.M., Dankova, N.M., Amitina, N.I. and
Rutshteyn, E.M.   68-5-10/14

TITLE: Photocolorimetric method of determining cyanide in gas.
(Fotokolorimetricheskiy metod opredeleniya tsiana v gaze).

PERIODICAL: "Koks i Khimiya" (Coke and Chemistry), 1957, No.5,
pp.45-46 (U.S.S.R.)

ABSTRACT: The method consists of transferring CN' into CNS' and
measuring the intensity of the colour of Fe(CNS)$_3$ with a
photocolorimeter. Gas (3 to 3.5 l) is passed through a
4N NaOH solution which is then diluted to a known volume
(100 ml) and an aliquot portion (50 ml) is boiled for 2
minutes with 0.2 ml of (NH$_4$)$_2$S$_n$ and 5 ml of a 10% solution
of CdCl$_2$. The mixture is filtered and the filtrate is
transferred into a 100 ml measuring flask to which 10 ml
of 58-60% nitric acid 5 ml of 10% solution of FeCl$_3$ is
added. The solution so obtained is diluted with distilled
water to 100 ml and after standing for 30 minutes the
intensity of colour is measured using a green filter. For
comparison, a blank determination is made. It is claimed
that the method gives satisfactory results (see Table).
Card 1/2 The whole determination takes 90 minutes.

Photocolorimetric method of determining cyanide in gas.
(Cont.)   68-5-10/14

There is 1 table and 1 graph.

ASSOCIATION: Zhdanov Coke Oven Works. (Zhdanovskiy Koksokhimi-
cheskiy Zavod).

AVAILABLE:

Card 2/2

RUTSHTEYN, I.S. (Moscow).

Flase acute surgical syndroms in the clinical aspects of allergic states.
Klin.med. 31 no.10:34-40 O '53.   (MIRA 6:11)

1. Iz terapevticheskikh otdeleniy TSentral'noy klinicheskoy bol'nitsy im.
N.A.Semashko (nauchnyy rukovoditel' - zasluzhennyy deyatel' nauki professor
I.A.Iassirskiy) Ministerstva putey soobshcheniya.   (Allergy)

RUTSHTEYN, I. I. (Moskva)

Hypernephroid cancer of the kidney with a single metastasis into the pituitary body. Arkh. pat. 26 no.4:79-80 '64.   (MIRA 18:7)

1. TSentral'naya patologoanatomicheskaya laboratoriya (zav. - kand. med. nauk R.D.Shtern) Instituta morfologii (dir. - chlen-korrespondent AMN SSSR prof. A.P.Avtsyn) AMN SSSR i patologoanatomicheskoye otdeleniye Glavnogo voyennogo gospitalya imeni Burdenko.

RUTSHTEYN, M.D.; KAZAKOVA,L.P.khimik

On the article "Disinfection of drinking water by hydrogen peroxide."
Gig. i san. 21 no.11:48-50 N '56.   '   (MIRA 10:2)

1. Iz laboratorii stalinskoy vodoprovodnoy stantsii Moskvy.
    (WATER SUPPLY
        disinfection of drinking water with dydrogen peroxide)
    (HYDROGEN PEROXIDE, eff.
        disinfection of drinking water)

RUTSHTEYN, N.D.; PYASETSKAYA, TS.S.

Aerogenic Escherichia coli in potable water at various states
of purification. Zhur.mikrobiol.epid. i immun. no.9:97-98 S '55.
(MLRA 8:11)

1. Iz laboratorii Stalinskoy vodoprovodnoy stantsii Mosvky.
(WATER SUPPLY, bacteriology,
E.coli, aerogenic strains in various states of purification)
(ESCHERICHIA COLI,
aerogenic strains, in potable water in various stages of
purification)

Purification of drinking water with hydrogen peroxide   2

water purification   G. M. Kassner

RUTSHTEYN, N. D.

Cause of atypical growth of Escherichia coli on membrane filters.
Gig. sanit., Moskva No. 10, Oct. 50. p. 51-2

1. Of the Laboratory of Stalin Waterworks Station, Moscow.

CLML 20, 3, March 1951

KAPLAN, D.A.; EPSHTEYN, TS.A.; RUTSHTEYN, P.V.; TOROPOVA, M.N.

Viral etiology of multiple sclerosis. Zhur. nevr. i psikh.
64 no.3:368-369 '64.   (MIRA 17:5)

1. TSentral'naya klinicheskaya psikhonevrologicheskaya i
neyrokhirurgicheskaya bol'nitsa (nachal'nik V.M. Yushtin)
Ministerstva putey soobshcheniya, Khar'kov.

LEVI, M.I.; BASOVA, N.N.; RUTSHTEYN, P.V.

Laboratory diagnosis of lymphocytic choriomeningitis with the aid
of complement fixation reaction. Nevropat. psikhiat., Moskva 20
no.2:5-12 Mar-Apr 1951.   (CLML 20:9)

1. Candidate Medical Sciences Levi. 2. Of the Virusological
Department (Head—Prof. V.M. Zhdanov), Ukrainian Institute of
Epidemiology and Microbiology imeni Mechnikov, and of the
Central Clinical Psychoneurological Hospital of the Ministry
of Ways of Communication (Head—Docent I.Z. Vel'vovskiy).

LEVI, M.I.; BASOVA, N.N.; RUTSHTEYN, P.V.

Method of applying the complement fixation reaction in diagnosis of
lymphocytic choriomeningitis; author's abstract. Zhur.mikrobiol.epid.i
immun. no.3:51 Mr '54.   (MLRA 7:4)

1. Iz virusologicheskogo otdela Khar'kovskogo instituta vaktsii i syvo-
rotok (direktor - kandidat biologicheskikh nauk G.P.Cherkas) i Tsentral'-
noy psikhonevrologicheskoy bol'nitsy Ministerstva putey soobshcheniya
(nachal'nik N.P.lushtin).   (Meningitis) (Complement fixation)

KORENBLIT, R.S.; MARKOVA, L.A.; RUTSHTEYN, P.V.

Antibodies to the brain component of neurovirus vaccines. Vop.
virus 6 no.4:482-486 Jl-Ag '61.   (MIRA 14:11)

1. Khar'kovskiy institut vaktsin i syvorotok imeni I.I.Mechnikova
i TSentral'naya psikhonevrologicheskaya bol'nitsa Ministerstva putey
soobshcheniya, Khar'kov.
          (ANTIGENS AND ANTIBODIES)   (ENCEPHALOMYELITIS)
             (MULTIPLE SCLEROSIS)   (RABIES)

EPSHTEYN, TS.A.; KAPLAN, D.A.; RUTSHTEYN, P.V.; TOROPOVA, M.N.

Diagnosis and treatment of multiple sclerosis. Vest. AMN SSSR 16
no.6:53-57 '61.   (MIRA 15:1)

1. TSentral'naya psikhonevrologicheskaya i neyrokhirurgicheskaya
bol'nitsa Ministerstva putey soobshcheniya.
        (MULTIPLE SCLEROSIS)   (ENCEPHALOMYELITIS)

KORENBLIT, R.S.; MARKOVA, L.A.; RUTSHTEYN, P.V.; EPSHTEYN, TS.A.

Comparative study of the methods of diagnosis of acute encephalomyelitis and multiple sclerosis. Vest. AMN SSSR 16 no.6:61-64 '61.
(MIRA 15:1)

1. TSentral'naya psikhonevrologicheskaya bol'nitsa Ministerstva putey soobshcheniya i Institut vaktsin i syvorotok, Khar'kov.
(MULTIPLE SCLEROSIS)   (ENCEPHALOMYELITIS)

BAYASANOV, Dilavar Bilalovich; ABASOV, M., red.; RUTSHTEYN, S., red.;
GONCHAROV, I., red. izd-va; SALIMOVA, V., tekhn. red.

[Automatic and remote control devices in mucipal gas supply
systems]Avtomaticheskie i telemekhanicheskie ustroistva v
gorodskikh sistemakh gazosnabzheniia; uchebnoe posobie dlia
tetekhnicheskikh vuzov. Baku, Azerbaidzhanskoe gos. izd-vo
uchebno-pedagog. lit-ry, 1961. 300 p.   (MIRA 15:10)
        (Gas distribution)   (Automatic control)
                 (Remote control)

RUTSHTEYN, S.Yu.

Innervation of the vessels of the upper extremities. Nauch.
trudy Kaz. gos. med. inst. 14:277-278 '64.

Innervation of the vessels of the lower extremities. Ibid.:279-280
(MIRA 18:9)
1. Kafedra operativnoy khirurgii i topograficheskoy anatomii (zav. -
prof. V.Kh.Frauchi) Kazanskogo meditsinskogo instituta.

RUTSHTEYN, S. YU.

21046 Rutshteyn, S. Yu.   Tkanevaya t rapiya pri lec eniya iz "yazvivshikhsya Rubtsov i Troficheskikh yazv. Trudy In-ta (Kazansk Nauch-issled in-t ortopedii i vosstanovit. Khirurgii) t.111, 1949, s. 89-95.

SO: LETOPIS ZHURNAL STATEY -Vol. 28, Moskva, 1949

RUTSHTEYN, S.Yu., kand.med.nauk (Kazan', ul.Kolkhoznaya, d.11,kv.14)

Surgical anatomy of the truncus sympathicus in the lumbar region.
Nov. khir. arkh. no.1:78-80 Ja-F '60.   (MIRA 15:2)

1. Kafedra operativnoy khirurgii i topograficheskoy anatomii (zav. -
prof. M.M.Shalagin) Kazanskogo meditsinskogo instituta.
                    (LUMBAR CURVE—INNERVATION)

GORBACHEVA, N.A.; GUGEL', B.M.; KONSTANTINOVA-SHLEZINGER, M.A.; LAPIR, Ye.S.;
RUTSHTEYN, T.G.

Phosphate luminophors for fluorescent lamps with improved color
transmission. Izv. AN SSSR. Ser. fiz. 25 no.4:455-458 Ap '61.
                                        (MIRA 14:4)
        (Phosphors)   (Flourescent lamps)

KRASNICHENKO, S., inzh.; RUTSHTEYN, Ye.

A smaller grain elevator with a combined weighing and bucket
conveying system. Muk.-elev.prom. 25 no.7:17-18 Jl '59.
(MIRA 12:11)

1. Rostovskoye otdeleniye Gosudarstvennogo instituta Promzerno-
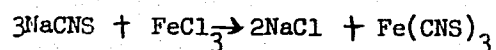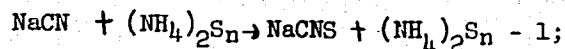proyekt.
(Grain elevators)

"Photocolorimetric Method of Determination of Cyanogen in Gas,"
by A. M. Rozina, N. M. Dankova, N. I. Amitina, and Ye. M. Rutshteyn
Zhdanov Coke Chemical Plant, Koks i Khimiya, No 5, 1957, pp 45-46

A group of research workers at the laboratory of the Zhdanov Coke
Chemical Plant developed a new and rapid colorimetric method of determining
cyanogen in gas. The method is based on the conversion of CN into CNS,
and then measuring with the aid of a colorimeter the intensity of coloration
of $Fe(CNS)_3$ which is formed by the interaction of the ions of CNS and Fe^{+++}.

Cyanogen from coke gas is obtained by a 4N solution of NaOH and HCN
by the reaction $HCN + NaOH \rightarrow NaCN + H_2O$. The sodium cyanide obtained in
the reaction is then treated with ammonium polysulfide forming sodium
thiocyanate:

$$NaCN + (NH_4)_2S_n \rightarrow NaCNS + (NH_4)_2S_{n-1};$$

$$3NaCNS + FeCl_3 \rightarrow 2NaCl + Fe(CNS)_3$$

The new colorimetric method makes it possible to complete an analysis
of the gas in 1.5 hours, including the time necessary to obtain a sample of
the gas. (U)

RUTSINSKAYA, N.S.; YEFIMOVA, M.G.

Spectrographic determination of copper in crude lead.
Sbor.trud. VNIITSVETMET no.9:177-180 '65.

(MIRA 18:11)

TKACHENKO, F.D.; RUTSINSKIY, P.N.

        Sleeves for hydraulic devices. Put' i put. khoz. no.3:19 Mr '59.
                                  (MIRA 12:6)

      1.Nachal'nik mekhanicheskogo zavoda, Odessa (for Tkachenko). 2.Glavnyy
      tekhnolog mekhanicheskogo zavoda, Odessa (for Rutsinskiy).
               (Hydraulic jacks)

YEDIDOVICH, Valentin Andreyevich, inzhener; IL'CHUK, Vladimir Yefimovich;
    RUTSINSKIY, Pavel Nikolayevich; TKACHENKO, Filogoniy Dmitriyevich,
    kandidat tekhnicheskikh nauk; RYSIN, A.Ye., inzhener, redaktor;
    YUDSON, D.M., tekhnicheskiy redakter.

[Centralized lubrication of locomotives] TSentralizovannaia smazka
parovozov. Moskva, Gos.transp.zhel-der.izd-vo, 1956. 126 p.
                (Locomotives--Lubrication)   (MIRA 9:6)

STASYUKOV, M.; CHUBAROV, P.; ZAYCHENKO, I., ratsionalizator; RUTSINSKIY, V.;
VOLOVIK, A.; KNYSHEV, I.; SHTEYNGART, M.

Why are the suggestions of Dnepropetrovsk metal workers so slowly
realized? Izobr.i rats. no.11:24-25 N '58.   (MIRA 11:12)

1. Dnepropetrovskiy metallurgicheskiy zavod im. Petrovskogo (for all
except Shteyngart). 2. Starshiy inzh. Byuro izobretateley i
ratsionalizatorov zavoda (for Stasyukov). 3. Zamestitel' predsedatelya
zavodskogo komiteta (for Chubarov). 4. Zamestitel' sekretarya partiynogo
komiteta zavoda(for Rutsinskiy).5. Zamestitel' sekretarya komiteta Leninskogo
kommunisticheskogo soyuza molodezhi Ukrainy (for Volovik). 6. Sotrudnik
gazety "Tribuna metallurga" (for Knyshev). 7. Spetsial'nyy korrespondent
zhurnala "Izobretatel' i ratsionalizator" (for Shteyngart).
                    (Dnepropetrovsk--Efficiency, Industrial)

ROZINA, A.M.; DANKOVA, N.M.; AMITINA, N.I.; RUTSHTEYN, Ye.M.

Photocolorimetric method for determining cyanogen in gas.
Koks i khim. no.5:45-46 '57.   (MIRA 10:5)

1. Zhdanovskiy koksokhimicheskiy zavod.
    (Cyanogen--Analysis) (Gases--Analysis) (Colorimetry)

L 42-20-65   EWT(d)/EWT(1)/EWP(c)/EWP(v)/T/EEC(b)-2/EWP(k)/EWP(1)/EWA(h)   Pf-4/
Pg-4/Pl-4/Pm-4/Po-4/Pq-4/Peb
ACCESSION NR: AT5007777   P/2507/64/014/046/0039/0044

AUTHOR: Rutska, K.

TITLE: Realities of electronic equipment reliability requirements

SOURCE: Warsaw. Przemyslowy Instytut Telekomunikacji, Prace, v. 14, no. 46, 1964, 39-44

TOPIC TAGS: equipment reliability, reliability requirement, failure frequency, confidence interval, confidence level

ABSTRACT: Reliability specifications for complex electronic equipment are often imprecise or even incompatible with the state of the art. Due to the random character of failures and limited time available for testing, the mean time between failures (MTBF) is a statistical quantity which can only be estimated by means of a confidence interval. After a thorough discussion of standard MTBF formulas and confidence limits of the χ^2 - distribution, the author concludes that a correct reliability specification for complex electronic equipment must include not only the MTBF but also its tolerance (confidence interval) and the confidence level β , i.e. the probability that the specified confidence interval will be achieved, which is generally 0.9 or higher. Two other important factors are stressed. The first is that the MTBF must be specified on the basis of really necessary

Card 1/2

L 42020-65
ACCESSION NR: AT5007777

exploitation requirements. An exaggerated specification may easily result in drastic cost increases or may make the design of the equipment impossible due to limitations in the state of the art. The second factor is a judicious specification of the confidence interval and of the confidence level. High confidence levels and narrow intervals require either a long testing time or a test involving a large number of systems, causing a significant increase in testing cost if the reliability performance is to be verified. Orig. art. has: 11 formulas, 8 figures and 2 tables.

ASSOCIATION: Przemyslowy Instytut Telekomunikacji, Warsaw (Telecommunications Research Institute)

SUBMITTED: 17Oct62   ENCL: 00   SUB CODE: EC

NO REF SOV: 000   OTHER: 008

Card: 2/2

RUTSKA, K.

Requirement reality concerning the reliability of electronic
equipment. Przem inst telekom prace 14 no.46:39-44 '64.

RUTSKAI, K.

Soviet nuclear physics in agriculture, p. 5, UJITOK LAPJA, (Orszagos
Talalmanyi Hivatal) Budapest, Vol. 7, No. 5, Mar. 1955

SOURCE: East European Accessions List (EEAL) Library of Congress,
         Vol. 4, No. 12, December 1955

RUTSKA?, K.

Outstanding Technology Days in our workshops, p. 5, UJITOK LAPJA, (Orszagos
Talalmanyi Hivatal) Budapest, Vol. 7, No. 5, Mar. 1955

SOURCE: East European Accessions List (EEAL) Library of Congress,
          Vol. 4, No. 12, December 195.

CA

2

Solubility of cryolite in salts of some organic acids. Yu. L. Lel'chuk and E. I. Rutskaya. *Zhur. Priklad. Khim.* (J. Applied Chem.) 22, 499-503(1949).—Solubilities of the double salts 11NaF.4AlF₃ (I) (*C.A.* 43, 5605e) and 5NaF.2FeF₃ (II) (Tananaev and Deichman, *C.A.* 40, 7038⁴), prepd. by pptn. of the equiv. amts. of the simple salts, were detd. at 25°. In Na₃C₆H₅O₇ (citrate) 0.000, 0.01, 0.03, 0.3, 1.0 *M*, the soly. of I is 0.0469, 0.0570, 0.0794 (max.), 0.0630, 0.0200 %, that of II, 0.2551, 0.2969, —, 0.5040 (max.), 0.2216%. In NaC₇H₅O₃ (salicylate) 0.000, 0.001, 0.01, 0.1, 1.0 *M*, I 0.0460, —, 0.0507, 0.0528, 0.1181%, II, 0.2551, 0.2562, 0.2305, 0.2305, 0.3181%, i.e. practically const. up to 0.1 *M*, then increasing. In Na₂C₂O₄ (oxalate) 0.001, 0.01, 0.1 *M*, I 0.0481, 0.0660, 0.0046%, II, 0.2583, —, 0.0256%. In (CH₂)₂(CO₂Na)₂ (succinate) 0.001, 0.01, 0.1 *M*, I, —, 0.2530, 0.0147, II, 0.0788, 0.0525, 0.0224%, i.e. decreasing with increasing concn. The soly. is thus detd. by antagonism between complex formation and the salting-out effect. Differences of the solubilities of the double fluorides of Al and Fe are insufficient for a quant. sepn. of the 2 elements.
N. Thon

RUTSKAYA, L.N.

USSR/General Problems of Pathology. Immunity   U-1

Abs Jour   : Ref Zhur - Biol., No 5, 1958, 22829

Author   : Vol'nov, Yu. I., Rutskaya, L.N.
Inst   : -
Title   : The Effect of Penicillin and Streptomycin Upon Antibody
               Formation.

Orig Pub   : Sb. nauchn. stud. rabot Kurskogo med. in-ta, 1956, vyp.
               3, 58-61

Abstract   : Rabbits that had been receiving penicillin or streptomy-
               cin for 29 days were immunized with warm paracolon ba-
               cillus vaccine. The increase in antibody titer was mo-
               re pronounced in those that had received antibiotics.

Card 1/1

LEVITMAN, Kh.Ya.; RUTSKAYA, Ye.I.; KARPOVICH, N.I.

Physicochemical analysis of a lead nitrate - rubeanic acid - water
system and its importance in analysis. Sbor.nauch.trud.Bel.politekh.
inst. no.87:45-54 '69.   (MIRA 14:4)
            (Lead nitrate)   (Oxamide)

RUTSKAYA, YE.I.

DEVITMAN, Sh.Ya.; KARPOVICH, N.I.; RUTSKAYA, Ye.I.

Polarographic properties of rybeanic acid.   Sbor.nauch.rab.Bel.
politekn.inst. no.55:112-118 '55.   (MIRA 10:7)
                    (Oxamide)   (Polarography)

RUTSKAYA, Ye. I.

"Solubility of Cryolite in Salts of Several Organic Acids", Zhur. Prik. Khim., 22, No. 5,

1949. Kbr.0hair Inorganic Chemistry, Belorussian Polytechnical Inst., -c1949-.

RUTSKI,A.I., datsent, kandydat tekhnichnykh navuk

Reaction spool with an airgap in the magnetic circuit. Vestsi
AN BSSR no.5:84-97 S-O '54.   (MIRA 8:9)
             (Electric machinery--Alternating current)

Rutskiy, A. I.

AID P - 1403

Subject   : USSR/Electricity

Card 1/2   Pub. 26 - 30/30

Authors   : Motovilov, V. V., Rutskiy, A. I., Kands. of
               Tech. Sci.

Title   : G. I. Atabekov. Principles of Distance Protection
               of Long Electric Transmission Lines, Academy of
               Sciences of the Armenian SSR, 1953, 214 pp.
               (Book Review)

Periodical : Elek. Sta., 2, 63-64, F 1955

Abstract   : The book discussed is the first in Soviet tech-
               nical literature which presents a detailed theory
               of relay protection based on remote control of
               long distance power transmission lines of 110 kv
               to 400 kv. It is written for engineers who
               design, operate or study relay protection of high

AID P - 1403

Elek. Sta.,   2, 63-64, F 1955

Card 2/2   Pub. 26 - 30/30

        voltage systems. It can be also very useful
        for students of engineering high education
        institutes. The opinion of the authors about
        the book is very favorable.

Institution: None

Submitted : No date

RUTSKIY, A.I., zasluzhennyy redyatel' nauki i tekhniki BSSR, redaktor;
TRUKHANOVA, A., tekhnicheskiy redaktor

[Manual for the rural electrician] V pomoshch' sel'skomu elektro-
monteru. Minsk, Gos. izd-vo BSSR, 1956. 289 p.   (MIRA 9:11)
   (Electricfty in agriculture)

RUTSKIY, A.I., kandidat tekhnicheskikh nauk.

Using a dynamic magnetization curve to calculate a steel-
cored reaction coil. Sbor.nauch.rab.Bel.polit.inst. no.53:
3-25 '56.   (MLRA 10:2)

(Electric coils) (Steel--Magnetic properties)

RUTSKIY, A.I., kandidat tekhnicheskikh nauk.

Magnetizing circuit parameters and the input impedances of
a reactor and transformer. Sbor.nauch.rab.Bel.polit.inst.
no.53:26-32 '56.   (MLRA 10:2)

(Electric reactors) (Electric transformers)
        (Impedance (Electricity))

RUTSKIY, A.I., kandidat tekhnicheskikh nauk; DOROSHEVICH, M.M., inzhener.

Over-all error of a current transformer. Sbor.nauch.rab.Bel.
polit.inst. no.53:33-43 '56.   (MLRA 10:2)

(Electric transformers)

SOV/112-59-1-9

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 1, p 1 (USSR)

AUTHOR: Rutskiy, A. I.

TITLE: Achievements of Soviet Power Engineering Over Forty Years

PERIODICAL: Energ. sb. Nr 5, Minsk, 1957, pp 3-34

ABSTRACT: Bibliographic entry.

Card 1/1

RUTSKIY, A.I., kand. tekhn. nauk, dotsent.

Technical progresss in Soviet power engineering. Izv. vys. ucheb.
zav.; energ. no. 1: 1-7 Ja '58.   (MIRA 11:7)

1. Belorusskiy politekhnicheskiy institut.
               (Power engineering)

RUTSKIY, A.I.; LEONKOV, A.M.; GEYLER, L.B.; SLEPYAN, Ya.Yu.; MOSHYEV, I.V.; SOBOLEV, A.I.; TINYAKOV, N.A.; VOIKOV, N.P.; BOTVINNIK, Ya.Ye.; BARABANOV, M.Ye.; BRAZGOVKA, V.A.; PEKELIS, G.B.; KUZOVNIKOVA, Ye.A.; KUZ'MIN, Yu.P.; SHIMKO, N.I.; PALLADIY, N.L.; KHUTSKIY, G.I.

G.I. Dobkin; obituary. Izv. vys. ucheb. zav.; energ. no.4:128 Ap '58.
(Dobkin, Grigorii Izrailevich, 1892-1958)   (MIRA 11:6)

RUTSKIY, A.I., kand.tekhn.nauk, zasluzhennyy deyatel' nauki i tekhniki BSSR;
ZAGOROVSKIY, Ye.N., inzh.; SLEPYAN, YA.YU., kand.tekhn.nauk; NOVASH,
V.I., kand.tekhn.nauk; TINYAKOV, N.A., kand.tekhn.nauk; KASHTANOV, F.,
red.; STEPANOVA, N., tekhn.red.

[Electrician's handbook] Spravochnoe posobie elektromontera.
Minsk, Gos.izd-vo BSSR, Red.nauchno-tekhn.lit-ry, 1960.   360 p.
(MIRA 13:9)

(Electricity--Handbooks, manuals, etc.)

RUTSKIY, A.I., kand. tekhn. nauk, zasl. deyate' nauki i tekhniki BSSR; ZAGOROVSKIY, Ye.N., inzh.; SLEPYAN, Ya.Yu., kand. tekhn. nauk; KOVASH, V.I., kand. tekhn.nauk; TINYAKOV, N.A., kand. tekhn. nauk; POL'SKIY, S., red.; KALECHITS, G., tekhn. red.; DOMOVSKAYA, G., tekhn. red.

[Electrician's manual] Spravochnoe posobie elektromontera. 2., perer. izd. Pod red. A.I.Rutskogo. Minsk, Gos. izd-vo BSSR. Red. nauchno-tekhn. lit-ry, 1961. 377 p.
(MIRA 15:4)

(Electric engineering--Handbooks, manuals, etc.)

ATABEKOV, G.I.; BASHARIN, A.V.; BOGORODITSKIY. N.P.; BULGAKOV, K.V.;
VASIL'YEV, D.V.; YEGIAZAROV, I.V.; YERMOLIN, N.P.; KOSTENKO, M.P.;
MATKHANOV, P.N.; NOVASH, V.I.; NORNEVSKIY, B.I.; RUTSKIY, A.I.;
RYZHOV, P.I.; SOLOV'YEV, I.I.; SOLODNIKOV, G.S.; SLEPYAN, Ya.Yu.;
SMUROVA. N.V.; TINYAKOV, V.A.; FATEYEV, A.V.; FEDOSEYEV, A.M.;
SHABADASH B.I.; SHCHEDRIN, N.N.

Viktor Ivanovich Ivanov, 1900-1964; obituary. Izv. vys. ucheb.
zav.; energ. 8 no.1:122-123 Ja '65.

(MIRA 18:2)

RUTSKIY, A.I.

For the development of communal animal husbandry. Veterinariia
41 no.1:5-10 Ja '65.

(MIRA 18:2)

1. Zamestitel' predsedatelya Syrdar'inskogo oblastnogo
ispolritel'nogo komiteta.

RUTSKIY, A.I., zasluzhennyy deyatel' nauki i tekhniki BSSR, dotsent, kand. tekhn.nauk

Department of Electric Power. Sbor.nauch.trud.Bel.politekh.inst. no. 66:12-19 '57.   (MIRA 16:9)

Theory and practice of the design of electrotechnical units and of multiampere busducts.   (179-183)   (MIRA 16:9)

1. Dekan energeticheskogo fakul'teta Belorusskogo politekhnicheskogo instituta imeni Stalina.

BELETSKIY, F.A., dots., kand. fiz.-matem.nauk; BIRKUN, N.Ye., inzh.;
KAZANOV, V.A., inzh.; KLYUSHIN, S.M., dots.; KRUCHININ, V.L.,
inzh.; MARCHENKOV, Ya.P., dots.; PISKAREV, V.S., inzh.;
RUTSKIY, A.I., inzh.; SOKOLOV, N.M., dots., kand. tekhn. nauk;
SOLUYANOV, L.N., inzh.; SHKARBANOV, Petr Fedorovich, dots.,
kand. tekhn. nauk; PANOV, V., red.; LUKASHEVICH, V., tekhn.red.

[Handbook for electricians] Spravochnik elektrika. Saratov,
Saratovskoe knizhnoe izd-vo, 1963.   458 p.   (MIRA 17:1)

RUTSKIY, Aleksandr Ivanovich; ZAGOROVSKIY, Ye.N., kand. tekhn. nauk, prepodavatel'; RUMYANTSEV, Yu.G., inzh., prepodavatel'; SKVARKO, E.A., inzh., prepodavatel' red.;TINYAKOV,N.A., kand. tekhn. nauk, dots., red.; VARENIKOVA, V., tekhn. red.

[Electric power plants and substations; principal electrical equipment]Elektricheskie stantsii i podstantsii; osnovnoe elek-tricheskoe oborudovanie. Minsk, Gos.izd-vo BSSR. Red. nauchno-tekhn. lit-ry, 1962. 423 p.   (MIRA 16:3)

1. Kafedra elektricheskikh stantsiy Belorusskogo politekhniche-skogo instituta (for Zagorovskiy, Rumyantsev).
  (Electric power plants) (Electric substations)

POSPELOV, G.Ye., doktor tekhn.nauk, prof.; RUTSKIY, A.I., prof.; SLEPYAN,
Ya.Yu., kand.tekhn.nauk, dotsent

Review of V.A.Venikov's textbook "Electromechanical transients
in electrical systems". Izv.vys.ucheb.zav.; energ. 8 no.4:105-
109 Ap '65.
(MIRA 18:4)

1. Belorusskiy politekhnicheskiy institut.

RUTSKIY, I.; RYBALKO, I., prepodavatel' obshchestvovedeniya; TARUD'KO, V.

Readers continue their discussion. Prof. tekh. obr. 21 no.1:24-25
Ja '64.
(MIRA 17:3)

1. Sekretar' partiynoy organizatsii tekhnicheskogo uchilishcha No.
2, Vladivostok (for Rutskiy). 2. Direktor Mozhayskogo gorodskogo
professional'no-tekhnicheskogo uchilishcha No.25, Moskovskaya obl.
(for Tarud'ko).

RUTSKIY, I.A., prof.

Problems concerning intraspecific relations of organisms. Agrobiologiia
no.1:133-134 Ja-F '63.   (MIRA 16:5)

1. Voronezhskiy gosudarstvennyy universitet.
                    (Botany—Ecology)

USSR/General Biology - Genetics.

B-6

Abs Jour   : Ref Zhur - Biol., No 15, 1958, 66781

Author   : Rutsky, I.A.

Inst   : Voronezhsk. un-t.

Title   : A Comparative Analysis of Vegetative Hybridization
               Methods of Grain Crops.

Orig Pub   : Byul. O-va estestvoispyt. pri Voronezhskom un-te, 1956,
               10, 11-25.

Abstract   : The methods of grafting grain suggested by I.G. Plotnikov
               and L.A. Golovtsov are compared and a conclusion is drawn
               that the latter method is better. This method consists
               in transplanting a germ onto the foreign endosperm of a
               ripe grain. Quoting the author: "Intervariety graftings
               did not produce definite results in the first grain gene-
               ration".

Card 1/1

- 12 -

RUTSKIY, I.A.

Some problems in the production of intergeneric hybrid seed corn
by remote geographical crossing. Trudy VGU 56.no.1:67-74 '59.
(MIRA 13:8)
(Hybrid corn)

RUTSKIY, I.A., prof.; KANEVSKAYA, G.S.

Remote hybridization of plants of the composite family by
previous vegetative crossing. Agrobiologiia no.4:621-622
Jl-Ag '61.
(MIRA 14:7)

1. Voronezhskiy gosudarstvennyy universitet.
(Compositae) (Hybridization, Vegetable)

RUTSKIY, I.A.

USSR / General and Special Zoology. Insects.   P

Abs Jour: Ref Zhur-Biol., No 4, 1958, 16500

Author   : Rutskiy I.A., Golitsyn A.V.
Inst   : Not given
Title   : Radical Methods of Controlling the Scale Insect
           on Room Lemon.
           (Radikal'nyye metody bor'by so shchitovkoi na
           komnatnom limone)

Orig Pub: Bul. O-va yestestvoispytate pri Voronezhsk. un-te,
          1955,9,35-39

Abstract: No abstract

Card 1/1

50

USCOMM-DC-55738

RUTSKIY, I. N.

A graphic analytical method for constructing volt-ampere performance curves for thermistors. Inzh.-fiz. zhur. 4 no. 5:115-117 My '61.

(MIRA 14:5)

1. Institut energetiki AN BSSR, Minsk.

(Thermistors) (Voltammetry—Graphic methods)

L 36269-66

ACC NR: AP6017285   SOURCE CODE: UR/0201/65/000/004/0039/0046

AUTHOR: Rutskiy, I. N.; San'ko, Yu. P.; Shashkov, A. G.   37

ORG: none   B

TITLE: Thermistor thermoanemometer ID

SOURCE: AN BSSR. Vestsi. Seryya fizika-tekhnichnykh navuk, no. 4, 1965, 39-46

TOPIC TAGS: thermistor, anemometer, resistance bridge, flow measurement, temperature measurement

ABSTRACT: The authors describe a semiconductor instrument (Fig. 1) in which thermistors are used to measure currents of air having a relatively small slowly-varying velocity. The instrument is based on the use of a bridge circuit with feedback which automatically compensates for the change of the resistance of a thermistor connected in one of the arms. The instrument can be used to measure temperature between 0 and 50C and to measure air stream velocity in two ranges, 0 - 4 and 0 - 20 m/sec. The theory of the instrument is described in detail and the electrical and air dynamic formulas involved in the theory are derived. The measurement error does not exceed 5% of the air stream velocity and 0.5C. Orig. art. has: 4 figures and 12 formulas.

Card   1/2

RUTSKIY, I.N.

Calculation of the volt-ampere characteristics of certain types of thermistors under natural convection. Inzh.-fiz. zhur. 6 no.11:105-111 N '63.

(MIRA 16:11)

1. Institut teplo- i massoobmena AN BSSR, Minsk.

9(3)

AUTHORS: Voloshin, I.F., Candidate of Technical Sciences,   SOV/143-58-11-8/16
                  Rutskiy, I.N., Engineer

TITLE: The Calculation of the Thermistor Temperature

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Energetika,
                  1958, Nr 11, pp 58-63 (USSR)

ABSTRACT: Thermistors find a constantly growing application in
                  the USSR economy and also in power engineering. For
                  example, thermistors are suitable for application in
                  thermal protection relay circuits of electrical equip-
                  ment. As a rule, the functioning of many protection
                  circuits is based on the relay effect phenomenon of
                  thermistors. This relay effect depends on heat trans-
                  fer conditions and the temperature of the medium into
                  which the thermistor is placed. An improper operation
                  of the thermistor at temperatures exceeding its maxi-
                  mum permissible range may cause irreversible chemical
                  processes in it. The author considers these two
                  problems in more detail. First, he presents the equa-
Card 1/7   tion of the static voltampere characteristics of a

The Calculation of the Thermistor Temperature   SOV/143-58-11-8/16

thermistor in the parametric form:

$$U = \sqrt{\frac{k(T-T_0)R_{c\infty} e^{\frac{B}{T}}}{}}$$

$$I = \sqrt{\frac{k}{R_{c\infty}}(T-T_0)e^{-\frac{B}{T}}} \tag{1}$$

where T and T_0 – absolute temperatures of the thermistor and its surrounding medium; B – material constant; R_c – conditional thermistor resistance; $k = \alpha F$ – scattering factor; α – heat loss factor; F – surface of the thermistor. The thermistor temperature at which the voltampere characteristic reaches its voltage maximum is determined according to the following formula:

$$T_{max} = \frac{B - \sqrt{B(B-4T_0)}}{2} \tag{2}$$

Card 2/7

This formula shows that the temperature of boltampere characteristic maximum, with unchanged heat loss con-

The Calculation of the Thermistor Temperature   SOV/143-58-11-8/16

ditions, is determined by the thermistor material constant and the temperature of the surrounding me- dium. Theoretically, a maximum of the voltampere characteristic will be possible under the condition $B \geqslant 4T_o$. Each thermistor type has a maximum permis- sible temperature – $T_{max.p}$. Solving equation (2) in regard to T_o and equalizing $T_{max} = T_{max.p}$, then T_o will be

$$T_o = T_{max.p} \left(1 - \frac{T_{max\ p}}{B}\right) \qquad (4)$$

The thermistor temperature at any point of the static voltampere characteristic may be determined by con- sidering the thermistor resistance as a temperature function, which is expressed in the equation

$$R = R_\infty e^{\frac{B}{T}} \qquad (5)$$

Card 3/7   Solving the aforementioned equation (5) in regard to T results in the equation

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$$T = \frac{B}{\ln\frac{R}{R\varphi}} \qquad (6)$$

Determining the temperature of a thermistor using the above equation produces a number of difficulties, since the resistance used in this equation is determined by the experimental static voltampere characteristic. Consequently, for calculating the temperature a plotting of all voltampere characteristics is required for those operating conditions under which the thermistor will work. The thermistor temperature may be determined by another method which is much simpler and which produces reliable results. This method is based on the assumption that the thermistor temperature depends on two basic magnitudes: the dissipation power (P_m) and the heat exchange conditions, characterized by the dissipation factor k. Then, according to Newton's equation

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$$P_T = k(t-T_0) = k\,(\Theta - \Theta_0) \qquad (7)$$

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where T, Θ and T_o, Θ_o – are temperatures of the thermistor and the surrounding medium, expressed in ^oK and ^oC. Solving the equation (7) in regard to T produces

$$T = \frac{1}{k} P_T + T_o \qquad (8)$$

Introducing $C = 1/k$ will result in the following equation

$$T = T_o + CP_T \qquad (9)$$

or:

$$\Theta = \Theta_o + CP_T \qquad (9a)$$

The author then considers the boundary conditions for the equation (9a), if $P_T = 0$ and $\Theta - \Theta_o = ?$. Further he explains a method for determining the factor C. Table 1 shows a comparison of thermistor temperatures for thermistors KTM-1, MMT-1 and KMT-1. The temperatures obtained according to equations (6) and (9) differ from each other. Therefore, the accuracy was investigated experimentally using thermistors TST-0.5

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and KMT-11. The author established that the equation
(9) produces more accurate results. The author stated
that the calculation technique for determining the
thermistor temperature for a group of static voltam-
pere characteristics is reduced to the following
a) according to the experimental static voltampere
characteristic, plotted at the temperature θ_0 of the
surrounding medium, the factor C must be determined;
b) the dependence $\theta = f(P_m)$ at θ_0 = const; c) the
temperature dependence of the thermistor from dissipa-
tion power at different temperature values of the sur-
rounding medium is obtained by changing the parameter
θ_0 by the magnitude of change of this temperature
$\Delta\theta_0$. There are 2 graphs, 1 table and 3 Soviet refer-
ences.

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9,2160 (1385, 1452, 1159

S/170/61/004/005/014/015
B111/B214

AUTHOR: Rutskiy, I. N.

TITLE: A graphical analytical method for the construction of volt
            ampere characteristics of thermistors

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 5, 1961, 115-117

TEXT: The calculation of electric circuits with thermistors is rather diffi-
cult on account of the nonlinearity of the thermistor characteristics. A
method is developed in this paper for the determination of the static volt-
ampere characteristics in air at normal pressure. The resistance of a
thermistor is $R = R_\infty e^{B/T}$, where R and B are constants for a given thermistor
and T is its temperature in °K. The quantity of heat transferred by the
thermistor to the surroundings is given by $P = K(T - T_0) = K(\theta - \theta_0)$, where
P is the dissipation factor of the thermistor. The temperature T depends
linearly on P when K = constant and T_0 = const. Explanation of the constancy
of C and T_0: C is not a constant a priori. It depends on different factors
such as the temperature of the surrounding medium, the temperature of the
thermistor, etc. Experiments have shown that for a whole series of transis-

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tors C in air changes very little for Θ_0 = 0 - 100°C and Θ = 0 - 150°C so
that for technical calculations C may be set equal to a constant in practice.
The temperature of the surrounding medium can always be maintained at a
constant value artificially. In the following part of the paper, a treat-
ment is given of the problem of constructing volt-ampere characteristics at
a certain temperature Θ_0' when these are given for a temperature Θ_0,
U = f(I) and R = f(Θ). By calculating R_i = U_i/I_i (i = 1, 2, ...) and
P_i = $U_i I_i$, Θ_i can be determined and $\Theta(P)$ brought in the diagram. $\Theta(P)$ inter-
sects the ordinate in Θ_0. For a given Θ_0', $\Theta(P)$ can be noted by parallel
displacement (see, Fig. 1). If it is assumed that some values of P_i are
known (for example, P_i' in the figure), R_i can be determined immediately and
thus the current and the voltage are known (see Fig. 1). The volt-ampere
characteristics for the thermistor MMT-1 (MMT-1) are shown in Fig. 2, where
the continuous curve is determined by experiment and the broken one by the
above mentioned procedure of calculation. There are 2 figures and 2 Soviet-
bloc references.

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A graphical ...

ASSOCIATION: Institut energetiki AN BSSR, g. Minsk (Institute of Power
              Engineering AS BSSR, Minsk)

SUBMITTED: September 30, 1960

Fig. 1: Auxiliary figure for
the calculation of volt-ampere
characteristics of thermistors,
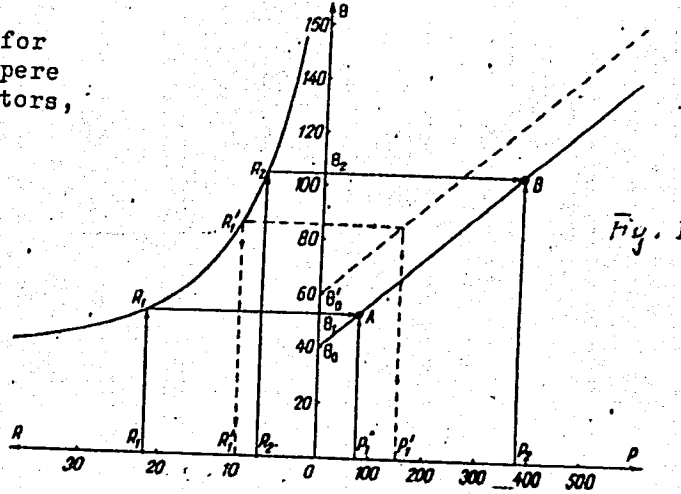θ - $^{\circ}$C; R - kohm; P - mw.

Fig. 1

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VOLOSHIN, I.F., kand.tekhn.nauk; RUTSKIY, I.N., inzh.

Calculating the temperature of thermistors. Izv.vys.ucheb.zav.;
energ. no.11:58-63 N '58.   (MIRA 12:1)

1. Institut energetiki AN BSSR, Predstavlena obshcheenergeticheskoy
sektsiyey.
                        (Thermistors)

VOLOSHIN, I.F.; RUTSKIY, I.N.

        Determining the coefficient of dissipation for thermistors [with
        summary in English]. Inzh.-fiz.zhur. 1 no.8:102-104 Ag '58.
                                        (MIRA 11:8)

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                (Thermistors)