SHAROV, Ivan Aleksandrovich, akademik; OZEROV, V.N., red.; KRZHIZHANOVSKAYA, G.V.; ZUBRILINA, Z.P., tekhn.red.

[Operation of hydraulic land-improvement systems] Ekspluatatsiia gidromeliorativnykh sistem. Izd.2., ispr. i dop. Moskva, Gos. izd-vo sel'khoz.lit-ry, 1959. 576 p. (MIRA 12:8)
(Irrigation) (Drainage)

ROGOVSKIY, Tadeush Timofeyevich; KRZHIZHANOVSKAYA, G.V., red.; PROKOF'YEVA, L.N., tekhn.red.

[Practical work in the mechanization, organization, and execution of hydraulic engineering operations] Praktikum po mekhanizatsii, organizatsii i proizvodstvu gidrotekhnicheskikh rabot. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1960. 282 p. (MIRA 13:9)
(Hydraulic engineering--Study and teaching)

KALABUGIN, Aleksandr Yakovlevich, prof.; MURASHEV, Sergey Iustinovich, dotsent; KRZHIZHANOVSKAYA, O.V., red.; GOR'KOVA, Z.D., tekhn.red.

[Agricultural water supply and land improvement] Sel'skokhozialstvennoe vodosnabzhenie i melioratsiia. Izd.2., perer. i dop. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1960. 342 p. (MIRA 14:1)

(Water supply, Rural)

KRZHIZHANOVSKIY, G.M.

Study, think, work and be daring! Znan.sila 35 no.4:4-5 Ap '60.
(MIRA 13:8)

(Krzhizhanovskii, Gleb Maksimilianovich)
(Education of children)

KRZHIZHANOVSKIY, G.M.

Planning and standardizing. Standartizatsiia 29 no.8:20-21 '65.
(MIRA 18:10)

PEREPELKINA, M.D., nauchnyy sotrudnik; GUBINA, R.S., nauchnyy sotrudnik;
Prinimali uchastiye: SHULESHKO, I.S., kand.tekhn.nauk;
KRZHIZHANOVSKIY, K.I.; DOROGOY, Ye.V.; LITICHEVSKIY, M.V.

Effect of certain factors on the characteristics of nonwoven fabrics manufactured by the knit-and-stitch method. Tekst. prom. 22 no.12:48-52 D '62. (MIRA 16:1)

1. Nauchno-issledovatel'skiy institut tekstil'noy promyshlennosti Leningradskogo soveta narodnogo khozyaystva (for Perepelkina, Gubina). 2. Nachal'nik pryadil'nogo sektora spetsial'nogo konstruktorskogo byuro tekstil'noy promyshlennosti Leningradskogo soveta narodnogo khozyaystva (for Shuleshko). 3. Glavnyy inzh. tekstil'noy fabriki im. Nogina (for Krzhizhanovskiy). 4. Starshiy inzh. spetsial'nogo konstruktorskogo byuro trikotazhnykh mashin Leningradskogo soveta narodnogo khozyaystva (for Litichevskiy).

(Nonwoven fabrics)

BERNSHTEYN, M.Kh.; YABKO, Ya.M.; ZAYONCHKOVSKIY, A.D.; KRZHIZHANOVSKIY, K.O.; ZAMYATIN, K.K.; BERNSHTEYN, Ye.S.; BARKOVA, L.V.; PROKURAT, R.E.; VTOROV, G.N.

Artificial leather with a nonwoven base. Kozh.-obuv.prom. 5 no.4: 18-21 Ap '63. (MIRA 16:5)

(Leather, Artificial)

BOBIN, K.P.; GERASIMOV, N.S.; GOLUBEV, S.G.; DEMIDOV, P.G.; DEM'YANENKO, M.P.; YEVTYUSHKIN, N.M.; ZEMSKIY, M.I.; KALASHNIKOV, K.A.; KONCHAYEV, B.I.; KOROLEV, A.I.; KRZHIZHANOVSKIY, P.I.; KULAKOV, G.M.; POLOSUKHIN, M.N.; ROYTMAN, M.Ya.; RUMYANTSEV, V.I.; SEMUSHKIN, B.V.; SMUROV, A.N.; TARASOV-AGAKOV, N.A.; TOMASHEV, A.I.

Semen Vasil'evich Kaliaev; obituary. Pozh. delo 4 no.5:29 My '58. (Kaliaev, Semen Vasil'evich, 1904-1958) (MIRA 11:5)

32-8-17/61

AUTHOR: Krzhizhanovskiy, R.Ye.

TITLE: Perfection of the Method for Simultaneous Determination of the Heat Conductivity and the Current Conductivity of Various Types of Steel (Usovershenstvovaniye metoda odnovremennogo opredeleniya teploprovodnosti i elektroprovodnosti staley).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 8, pp. 925-927 (USSR)

ABSTRACT: In the Central Institute for Steam Boilers and Turbines (no place given) a new apparatus was constructed according to the Kolraush method which permits the simultaneous determination of the thermal and current conductivity of heat-resistant steel alloys (λ and σ). The two values are determined on the basis of an investigation of the temperature distribution and of the potential of the sample which is included in the circuit. The initial formula is:

$$\sigma\left(\frac{dv}{dx}\right)^3 + \lambda\frac{d^2t}{dx^2} - \frac{\alpha}{S}(t - t_{op}) = 0,$$ where S signifies the surface of the cut of the sample, t_{op} - the temperature of the sphere, α - coefficient of heat variations on the surface of the sample. The solution of this equation yields the characteristic of the newly constructed apparatus which was recently perfected. The

Card 1/2

Perfection of the Method for Simultaneous Determination of the Heat Conductivity and the Current Conductivity of Various Types of Steel. 32-8-17/61.

principal scheme of this apparatus is given. The process of determination takes 2 hours. The construction of the apparatus is adapted to the determination of the λ and σ values of cylindrical samples (100 mm in length and 4-6 mm ϕ) or tubes of the same dimensions. Cast steel of type ЭИ IT was here used as sample.

ASSOCIATION: Central Institute for Steam Boilers and Turbines (Tsentral'nyy kotloturbinnyy institut).

AVAILABLE: Library of Congress

Card 2/2

KRZHIZHANOVSKIY, R. Ye.: Master Tech Sci (diss) -- "Methods and results of investigating the thermal conductivity, electrical conductivity, and Lorentz constant of refractory alloys". Moscow, 1958. 12 pp (Min Higher Educ USSR, Moscow Order of Lenin Power Inst), 150 copies (KL, No 1, 1959, 119)

KRZHIZHANOVSKIY, R.Ye., insh.

Heat conductivity of austenite steel. Energomashinostroenie 4 no.11:44-46 N '58. (MIRA 11:11)
(Austenite)

96-1-12/31

AUTHOR: Krzhizhanovskiy, R.Ye., Engineer.

TITLE: The Dependence of the Thermal Conductivity of Certain Heat-resisting Alloys on Their Condition and Heat Treatment. (Zavisimost' teploprovodnosti nekotorykh zharoprochnykh splavov ot sostoyaniya i termicheskoy obrabotki)

PERIODICAL: Teploenergetika, 1958, Vol.5, No.1, pp. 44 - 48 (USSR).

ABSTRACT: The experimental equipment, illustrated in Fig.1, employed Kohlrausch's method, which is based on the investigation of the distribution of temperature and potential in a specimen carrying electric current. The formulae used in the calculations are given. The sample was a cylinder, 5 mm dia. and 100 mm long; measurements were made on a length of 70 mm. The specimen was in an evacuated protective cylinder, provided with heaters.
The accuracy of determination of electrical conductivity is better than 1%. The scatter of data on thermal conductivity was usually 1 - 2%, and did not exceed 3%. The correction for lateral heat exchange did not exceed 3 - 5% of the axial heat flow through the specimen. The investigations were, for different alloys, made under the same conditions. Table 1 gives experimental data for a number of steels and alloys. Tests were made on alloys ЯIT, ЭИ-606 and ЭИ-572. The analyses

Card1/4

The Dependence of the Thermal Conductivity of Certain Heat-resisting Alloys on Their Condition and Heat Treatment.

of these and the other alloys investigated are given in Table 2. The results of tests on alloy ЭИ1Т are given in Fig.2A and those on ЭИ-606 in Fig. 2B. The influence of ageing on the thermal and electrical conductivity of the alloy was studied on specimens of steel ЭИ-572 held at about 700 °C for 4 000 hours; the results obtained are given in Fig. 3. The alloy has the least thermal conductivity in the initial hardened condition because most of the alloying elements are present in the form of solid solution; a photomicrograph is in Fig. 4a. If the metal is aged for 500 hours at 700 °C, there is a fairly marked increase in thermal conductivity, accompanied by a change in microstructure, as shown in Fig. 4b. When the specimen was held for 2 000 hours at 700 °C, the thermal conductivity fell somewhat compared with the value after 1 000 hours. Increase in the time to 4 000 hours causes a further increase in thermal conductivity.

The influence of heat-treatment on the thermal and electrical conductivities of nickel-base alloys, and particularly steel ЭИ-607, was then considered. The effect of the hardening temperature on the thermal and electrical conductivities was

The Dependence of the Thermal Conductivity of Certain Heat-resisting Alloys on Their Condition and Heat Treatment.

examined. At a temperature of 550 - 600 °C, almost all specimens of ЭИ-607 have a minimum electrical conductivity. Fig.5 shows graphically that if the steel is hardened at 1 000 °C and then maintained at 700 °C for 2 hours, the thermal and electrical conductivities scarcely change.
Further results of tests made on samples subjected to complicated heat cycles followed by long periods at high temperatures are given in Fig. 6. The influence of the ageing temperature on the properties of the alloy is given in Fig. 7 and is seen to have more influence on the thermal than on the electrical conductivity.
Alloy ЭИ-437, which is also nickel-based, was maintained at 850 °C for periods of up to 2 000 hours; the resultant electrical and thermal conductivities are shown graphically in Fig.8.
It is concluded that for steels Я1Т, ЭИ-606 and ЭИ-572, the state and low-temperature heat-treatment (340 °C, 1 000 hours) have no appreciable influence on the thermal conductivity of 18/8 type steels. On the other hand, holding hardened steel at 700 °C affects its thermal conductivity. In the case of

The Dependence of the Thermal Conductivity of Certain Heat-resisting Alloys on Their Condition and Heat Treatment.

alloy ЭИ-607 and ЭИ-437, soaking at 700 - 850 °C has little influence on the conductivity. The mechanism of ageing is not the same in 18/8 type alloys and in nickel-base alloys; therefore, the influence of soaking on the thermal conductivity is different. There are 8 figures.

ASSOCIATION: TsKTI

AVAILABLE: Library of Congress.

Card 4/4

KRZHIZHANOVSKIY, R. YE.

57-1-27/30

AUTHOR: Krzhizhanovskiy, R. Ye.

TITLE: On the Lorentz Constant for Steels (O postoyannoy Lorentsa dlya stali).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 1, pp. 202-206 (USSR).

ABSTRACT: The investigation of the influence of temperature, and of the structure of steels and alloys on the quantity L (Constancy of the ratio $L = \lambda/\sigma T$ according to the Wiedemann-Franz-Lorentz Rule) was carried out on a plant working according to the improved Kohlrausch method. In order to achieve more general and more complete results not only the own but also all other reliable data on heat and electric conductivity of other scientists were used. The dependence L = f (t, structure)-curves) was determined according to the λ and σ = f (t, structure)-curves. The complicated character of the complex influences of the admixtures on the conductivity of steel was taken into consideration and the data available were used in different ways. The results of the utilization of experimental data are given for three steel groups (carbon steels, chrome steels, and chrome-nickel alloys). Furthermore, it is demonstrated that the investigation carried out by Powell (reference 1) (that heat treatment causes equal change of heat and electric conductivity) is not correct. The investigation carried out

Card 1/2

On the Lorentz Constant for Steels.

57-1-27/30

here proved the contrary. The results of these investigations are given. The following is stated conclusively: 1) The Lorentz Constant L for steels is a quantity depending on the temperature and the structure of the steel. In this connection the dependence varies with the different steel groups. 2) The quantity L depends on the structure of the alloy and represents a function of its heat treatment. The work was carried out in the TsKTI in the laboratory of professor, doctor of technical sciences SS. Kutaloladze.
There are 3 figures, and 5 references, 1 of which is Slavic.

SUBMITTED: January 25, 1957.

AVAILABLE: Library of Congress.

Card 2/2

S/114/60/000/010/007/007
E194/E484

AUTHOR: Krzhizhanovskiy, R.Ye., Engineer

TITLE: Methods of Calculating the Thermal Conductivity of Various Classes of Steel

PERIODICAL: Energomashinostroyeniye, 1960, No.10, pp.37-39

TEXT: There are a number of methods for calculating the thermal conductivity of carbon steels, developed by various authors on the basis of experimental data. The calculations usually necessitate experimental determination of the relationships between the electrical conductivity of steels and temperature. However, for a number of important classes of steels there is no way of assessing the coefficient of thermal conductivity. The material obtained from work at the Central Boiler-Turbine Institute, which is described in this article, fills the gap to some extent by providing a unified method of treating the most reliable experimental data to determine the coefficient of thermal conductivity of carbon, low alloy and chromium steels and also steels of the austenitic class including chrome-nickel steels. Thermal conductivity coefficients were also calculated for a number of grades of steel of various classes. Thermal conductivity of

Card 1/5

S/114/60/000/010/007/007
E194/E484

Methods of Calculating the Thermal Conductivity of Various Classes of Steel

steels is influenced by composition, temperature and structure. The influence of alloying elements is best assessed in relation to their content by volume in the metal. Accordingly, the methods of calculating the thermal conductivity coefficient given in the article are all related to the volumetric composition of the steels and to temperature. The method has been checked against a large amount of reliable experimental data. The content by volume of alloying substance is calculated by the formula

$$V = \sum g_i \frac{A_{Fe}}{A_i} \qquad (1)$$

V - the total content by volume of admixtures,
g_i - the content by weight of the particular element in the steel,
A - atomic weight.
The atomic weight ratios A_{Fe}/A_i for the various elements usually contained in steel are given in Table 1. The method of calculating the thermal conductivity of carbon steels is valid for

Methods of Calculating the Thermal Conductivity of Various Classes of Steel

annealed steel with alloying component contents by volume of 0.2 to 7% over the temperature range 5 to 500°C. For calculating the relation between the coefficient of thermal conductivity, the composition and the temperature, the following equation is valid:

$$\lambda = K\left(6.35 - \frac{t}{100}\right) + 28.8, \quad \frac{\text{kcal}}{\text{m h °C}} \qquad (2)$$

The values of the coefficient K which depend on the quantity of admixtures of the steel are given in Table 2 for values of V between 0.2 and 7%. Calculated values of thermal conductivity coefficients as function of temperature and amount of alloying agent for carbon steels are given in Table 3, the method is accurate to within 5 to 7%. The thermal conductivity of low alloy steels can be calculated by means of the equation:

$$\lambda = (2.56 - 0.29V)\left(6.35 - \frac{t}{100}\right) + 28.8, \quad \frac{\text{kcal}}{\text{m h °C}} \qquad (3)$$

Card 3/5

S/114/60/000/010/007/007
E194/E484

Methods of Calculating the Thermal Conductivity of Various Classes of Steel

Values of the thermal conductivity coefficients of low alloy steels as a function of temperature and composition are given in Table 4 whilst Fig.2 compares calculated and experimental data; it can be seen that the method is accurate to within about 10%. The method is valid for annealed chromium steel, it is assumed that the total content of carbon, manganese and silicon is about 2% by volume. The relationship between the thermal conductivity of chromium steels and the volumetric content of chromium and the temperature is given in Table 5 whilst the graph of Fig.3 compares experimental and calculated results for certain chromium steels. The accuracy of the method is 10 to 15%. Austenitic steels are based on an edge-centred structure of gamma iron which is of high electrical and thermal conductivity. Therefore, even quite large changes in the amount of alloy components have little influence on the thermal conductivity of austenitic steels. Accordingly, Eq.(4) is recommended for all high alloy steels of austenitic structure and, over the temperature range 50 to 900°C, its accuracy is 10 to 15%. The thermal conductivity of a number

Card 4/5

S/114/60/000/010/007/007
E194/E484

Methods of Calculating the Thermal Conductivity of Various Classes of Steel

of other grades of steel of various classes is then considered and coefficients of thermal conductivity are given in Table 6. The conductivities given here are appreciably lower than those given in some other handbooks and tables which are in error. Recently determined thermal conductivities for steel grade R-2 are given in Table 7 and it will be seen that agreement between theory and experiment is good. Because of recently developed experimental methods, it is now possible to determine the thermal conductivity of steel to within 3% but this is relatively complicated and laborious and the method of calculation described in this article should be used where an accuracy of 5 to 15% suffices. There are 3 figures, 7 tables and 10 references: 8 Soviet and 2 English.

Card 5/5

KRZHIZHANOVSKIY, R. E.

"Influence of Thermal Treatment on Therman and Electrical Conductivities of Heat Resistant Alloys."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR, June 1961.

22538
S/096/61/000/006/005/006
E193/E183

18 8100 1138

AUTHOR: Krzhizhanovskiy, R.Ye., Candidate of Technical Sciences

TITLE: Investigation of the thermal and electrical conductivities of some titanium-base alloys

PERIODICAL: Teploenergetika, 1961, No.6, pp. 56-61

TEXT: The high strength/weight ratio and excellent corrosion resistance of Ti and Ti-base alloys make these materials eminently suitable for many industrial applications, including those in the power generating industry. However, in order fully to realise the possibilities offered by these alloys it is often necessary to know their heat and/or electrical conductivities, and since data on these properties of the Ti-base alloys are scarce, the present investigation was undertaken. The chemical analysis of the alloys studied is given in Table 1, where the column headings are as follows: 1 - number of the specimen; 2 - alloying elements, wt.%; 3 - remaining components. The measurements were carried out in vacuum with the aid of equipment described by the present author in a previous paper (Ref.4: present journal, 1958, No.1). The 50-950 °C temperature range was covered by experiments spaced at intervals of 50 °C. The results are tabulated and also reproduced graphically

Card 1/6

Investigation of the thermal and .....

in a manner designed to show the effect of various alloying additions on the thermal and electrical conductivities (λ and σ respectively) of titanium. Thus, Fig.1a shows σ (ohm^{-1}cm^{-1}, left-hand scale) and λ (cal/cm sec ^{o}C, right-hand scale) plotted against the temperature (^{o}C) for specimens 1, 2, 18 and 21 (see the insert for the legend), whereby the effect of Al additions is illustrated. The effect of Mo and V is illustrated in the same manner in Fig.1б, and that of Zr in Fig.1в. Similar graphs in Fig.2 show the effect of Sn (Figs. 2a and б) and Zr (Fig.2в). It should be noted here that the scale of σ in these graphs varies, being σ, $\sigma \times 10^{-4}$, $\sigma \times 10^{-4}$ in Fig.1 a, б, and в, and $\sigma \times 10^{-4}$, σ, and $\sigma \times 10^{-1}$ in Fig. 2 a, б, and в, respectively. Analysis of the results obtained showed that at any given temperature, λ, σ, and $L = \lambda/\sigma T$ (where T is the absolute temperature) are functions of the total alloying additions content, expressed in vol.%. It was shown also that since the value of L at any temperature is constant and equal 3.3×10^{-8} v^2/^{o}C^2, the thermal conductivity of Ti-base alloys whose electrical conductivity is known can be calculated from the formula

$$\lambda = L \sigma T \times 0.239 = 7.9 \times 10^{-9} \sigma T \text{ cal/cm.sec.}^{o}\text{C.}$$

Card 2/6

22538

S/096/61/000/006/005/006
Investigation of the thermal and E193/E183

It was concluded that, in applications in which thermal conductivity is of paramount importance, Ti-base alloys containing zirconium or aluminium should be used.

There are 3 figures, 4 tables and 7 references: 3 Soviet and 4 non-Soviet. The English language references read as follows:

Ref.2: L. Silverman, J.Metals, N.J.S., 631, 1953.
Ref.3: E.G. Loewen. Trans. ASME 78, No.3, 1956.
Ref.5: J. Lunsford, N.J. Grant. Met. Progr., 10, No.3, 1956.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut
(Central Boiler and Turbine Institute)

Card 3/6

S/126/61/011/005/010/015
E073/E335

AUTHOR: Krzhizhanovskiy, R.Ye.

TITLE: Investigation of the Influence of Ageing on the Thermal Conductivity of the Alloy [illegible] (EI607A)

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol. 11, No. 5, pp. 741 - 745

TEXT: The steel EI607A is prone to precipitation-hardening; during ageing an intermetallite phase is rejected. Formation of a disperse phase is slow at 600 - 700 °C. The operating temperature for this alloy is 700 °C but depending on the conditions of operation of the gas turbines it may operate at lower temperatures of the order of 500 - 600 °C. The electrical-resistance method was applied for establishing the existence, under certain conditions of heating or heat-treatment, of a particular structure, the K-state. In nichrome-base alloys the K-state may occur in the temperature range 400 - 700 °C. In earlier work (Ref. 5 Teploenergetika, 1958, No. 1) the author has shown that in a number of cases

Card 1/10

Investigation of ....

structural changes in steels have a greater influence on the heat conductivity than on the electric conductivity. Therefore, it was proposed to utilise also measurement of the heat conductivity for studying structural phenomena. According to earlier work of the author (Ref. 7 - Zh. tekh.fiz., 1959, 28, No. 4) and that of A.S. Predvoditelev (Ref. 6 - Zh. exp. i teor. fiz., 1934, No. 8) the mechanism of heat conductivity is not the same as that of electrical conductivity. Atoms which are extraneous with respect to iron and distortions in the crystal lattice increase the scattering of electrons and reduce the electrical conductivity and the heat transfer. Since the influence of these factors on the scatter of the elastic oscillations of atoms is less, the effect of the latter on heat-transfer will increase. In high-alloy steels and alloys, the electron and phonon parts of the total heat-conductivity are of the same order of magnitude. Thus any change in the internal structure of the alloys resulting in an increase or decrease of the electron scattering will also affect the electric conductivity and the electron heat

Investigation of ....

conductivity. A change in the structure of the alloy will also inevitably affect the propagation of elastic waves, bringing about a change in the ratio of the electron and phonon heat conductivity and the relative change in the total heat conductivity can be many times as high as the changes in the electric conductivity. Therefore, the structural changes in the alloy can be investigated by measuring simultaneously the electric and heat conductivities. The experiments were made with cylindrical specimens, 5 mm in diameter and 100 mm long, in a vacuum of 10^{-4} mm Hg. In this paper the author deals with the structural changes which take place as a result of holding the alloy specimens at 600, 700, 750 and 800 °C for periods of up to 2 000 hours. The experiments also encompassed the study of the influence of heat-treatment prior to ageing on the properties. A detailed table is given on the various heat-treatments which were tried. Ageing at 600 °C took place after quenching, followed by multi-stage heat-treatment. At 600 °C two processes may occur: disintegration of the solid solution with rejection

Investigation of ....

of a finally-disperse intermetallite phase: a regrouping of atoms, i.e. formation of the K-state. If the specimen is aged after quenching, both processes may occur simultaneously. However, the processes of formation and destruction of the K-state can be separated by preliminary heat-treatment, aimed at rejection of a second phase from the solid solution. The possibility of the formation of the K-state in the alloy is indicated by the S-shape of the dependence of the electrical conductivity on temperature for most of the investigated specimens. The minimum electrical conductivity was obtained for the temperature range 500 - 600 °C. To determine the relation between these two processes and their influence on the ageing behaviour of the alloy at 600 °C, two differing heat-treatments were used: 1) heating at 1 100 °C for 5 hours, followed by quenching in water (ageing times 48 - 2 000 hours at 600 °); 2) 1 100 °C - 5 hours, water-quenching + 1000 °C - 2 hours, + 900 °C - 1 hour, + 800 °C - 2 hours, + 750 °C - 20 hours, + 650 ° - 48 hours (ageing at 600 °C for 500-2000 hours). The second mentioned heat-treatment was intended

Card 4/10

Investigation of ....

to ensure preliminary rejection of a second phase from the solid solution. The resulting changes in the temperature and electrical conductivity and the value L ($=\lambda/\sigma T$, T being the absolute temperature) are plotted in Fig. 1 for three differing temperatures of determination of the coefficients of heat and electrical conductivities (λ, cal/cm sec °C, $\sigma \times 10^{-4}\ \Omega^{-1}cm^{-1}$, α, $10^{8}\ V^2/g^2$ versus ageing time τ, hrs (Russian text at the origin of the coordinate system means "initial state"). [Abstractor's note: both the figure caption and the text specifically mention the quantity L ; the plot itself only shows values of λ, σ and α.]
It can be seen that the heat conductivity and the electrical conductivity σ decrease even after 40 hours holding at 600 °C. It can also be seen that ageing at 600 °C effects a considerable change in the ratio of the heat-to-electrical conductivity (L) which is attributed to the fact that the structural transformations have a stronger effect on the heat

Card 5/10

Investigation of ....

conductivity than they have on the electrical conductivity. Preliminary rejection of the second phase did not have any appreciable effect on the heat and electrical conductivity or on their interrelation. This leads to the conclusion that the influence of the ageing time and the thermal and electrical conductivity, plotted in Fig. 1, is mainly conditioned by the low-temperature process in the solid solution, which has a greater effect on the thermal conductivity. Experiments at other ageing temperatures also showed that the thermal conductivity was more sensitive to structural changes than the electrical conductivity and therefore in the further part of the work only the results of thermal conductivity are given. The character of the dependence of the thermal and electrical conductivity for ageing at 700 °C was basically the same as for ageing at 600 °C. However, the influence of preliminary high-temperature heat-treatment is more marked. Fig. 2 shows the results obtained for specimens aged for durations from the "initial state" to 2 000 hours for the following heat-treatments:

Investigation of ....

1) ageing after holding at 1 100 °C for 5 hours and water-quenching;
2) ageing after holding at 1 100 °C for 5 hours and water-quenching followed by holding at 1 000 °C for 2 hours and cooling in air;
3) ageing after a heat-treatment consisting of holding at 1 100 °C for 5 hours, water-quenching, holding at 1 000 °C for 2 hours plus holding at 900 °C for 1 hour plus holding at 800 °C for 2 hours plus holding at 750 °C for 20 hours.
During the initial period of ageing, the greatest distortion of the atomic lattice, obtained as a result of the fine disperse rejections, occurred for the first mentioned heat-treatment. However, with increasing ageing time, these distortions are rapidly removed. Judging from the fact that the preliminary heat-treatment reduces the minimum of the curves expressing the dependence of λ on the ageing time τ, it may be that a sharp change in the heat conductivity during ageing after quenching is due to the more intensive rejections and coagulations of the particles

Card 7/10

Investigation of ....

of the second phase. Fig. 3 shows the influence of the ageing temperature on the heat conductivity for a test temperature of 600 °C. In this case, all the specimens had the same preliminary heat-treatment, i.e. holding at 1 100 °C for 5 hours, water-quenching, holding at 1 000 °C for two hours, cooling in air. The obtained results confirm the earlier expressed view that, in a number of cases, the heat-conductivity is more sensitive to structural changes than the electrical conductivity and that low-temperature processes have the greatest effect on the conductivity of the alloy. There are 3 figures, 1 table and 8 Soviet references.

ASSOCIATION: Tsentral'nyy kotlovturbinnyy institut imeni I.I. Polzunova (Central Boiler-turbine Institute imeni I.I. Polzunov)

SUBMITTED: August 22, 1960

Card 8/10

S/862/62/001/000/006/012
E202/E492

AUTHOR: Krshizhanovskiy, R.Ye.

TITLE: Certain regularities in the behaviour of thermal conductivity of metals and alloys

SOURCE: Teplo- i massoperenos. t.1: Teplofizicheskiye kharakteristiki materialov i metody ikh opredeleniya. Ed. by A.V.Lykov and B.M.Smol'skiy. Minsk, Izd-vo AN BSSR, 1962, 115-125

TEXT: The effect of temperature, crystallographic structure and presence of admixtures on the behaviour of thermal conductivity λ, of non magnetic and magnetic metals and alloys with particular reference to iron and its common alloys is studied over the temperature ranges above room temperature. The main mode of investigation is based on determining the exact value of the index m in a formula relating electron thermal conductivity λ_e to the absolute temperature viz

$$\lambda_e = kT^{1-m}$$

and plotting λ_e as a function of temperature for the metals and alloys investigated. Extending similar arguments to the phonon

Card 1/2

Certain regularities ...

component of λ i.e. λ_{ph}, the author discusses the relation

$$\lambda_{ph} = \frac{1}{bT + f}$$

in which b is a constant and f a quantity characterizing the scattering of phonons on the admixtures. Lattice deformations are considered to be equivalent in this respect to the admixtures. Electrical resistivities σ are also plotted as functions of T and compared with λ plots. The effect of duration of thermal treatment on λ and σ are also studied. It is concluded that, contrary to general belief, λ plots are more sensitive in revealing the structural changes occurring within the metals than the metallographic observations and resistivity measurements. There are 4 figures and 1 table.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut im. Polzunova, g. Leningrad (Central Boiler and Turbine Institute imeni Polzunov, Leningrad)

34681
S/129/62/000/002/010/014
E073/E335

18.1150

AUTHOR: Krzhizhanovskiy, R.Ye., Candidate of Technical Sciences

TITLE: Influence of heat-treatment on the thermal conductivity and electrical conductivity of the steel 15Х12ВМФ (ЭИ802)(15Kh12VMF (EI802))

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no. 2, 1962, 48 - 49

TEXT: The steel EI802, which was developed by the laboratory of the author, is intended for rotors, discs and blades of turbines operating at temperatures up to 580 °C. The chemical composition is: 0.16% C, 0.21% Si, 0.63% Mn, 11.81% Cr, 0.42% Ni, 1.03% W, 0.59% Mo, 0.24% V, 0.014% S and 0.01% P. The work described was devoted to investigating the influence of the quenching and tempering temperatures and the duration of ageing of this steel at 550 and 600 °C on the thermal conductivity λ, the electrical conductivity σ and the quantity $\alpha = \lambda/\sigma T$, where T is the absolute temperature. A change in α indicates

Card 1/2

Influence of heat-treatment ....

that the state of the solid solution influences the background part of the heat-conductivity. λ and σ were determined on the same specimens. It was found that the quenching and tempering temperatures did not affect the thermal and electrical conductivity. Tempering after quenching increases the thermal conductivity by 3 - 13% and the electrical conductivity by 0 - 10%. Both the thermal and electrical conductivities increase appreciably after soaking at 600 °C for 1 000 hours. However, soaking at 550 °C for the same length of time does not bring about a change in the thermal and electrical conductivities. Microstructural analysis proves that holding at 550 °C does not change the structure, whilst holding at 600 °C leads to appreciable separation of carbides and their coagulation followed by redistribution of the alloying elements between the solid solution and the carbide phase. Thus, it is concluded that the thermal conductivity of the steel EI802 depends to a greater extent on the structure than the electrical conductivity. There are 3 figures and 2 Soviet-bloc references.

ASSOCIATION: TsKTI im. Polzunova

KRZHIZHANOVSKIY, R. Ye.

Some regular features of the behavior of the heat conduction of metals and alloys. Teplo- i massoper. 1:115-125 '62. (MIRA 16:1)

1. TSentral'nyy kotloturbinnyy institut im. Polzunova, Leningrad.

(Metals—Thermal properties)
(Alloys—Thermal properties)

KRZHIZHANOVSKII, R. E.; CHUDNOVSKAYA, I. I.

"The possibility of an anomalous relation of thermal conductivities of insulating materials and their volume weights."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Polzunov Boiler & Turbine Inst.

KRZHIZHANOVSKIY, R.Ye.; SIDOROVA, N.P.

Determining the heat conductivity of liquid-metal coolants by the longitudinal heat flux method. Inzh.-fiz. zhur. 7 no.8:75-80 Ag '64. (MIRA 17:10)

1. TSentral'nyy kotloturbinnyy institut im. I.I. Polzunova, Leningrad.

ACCESSION NR: AP4044417 S/0170/64/000/008/0075/0080

AUTHORS: Krzhizhanovskiy, R. Ye.; Sudorova, N. P.

TITLE: Determination of heat conduction of liquid metal heat conductors by the method of longitudinal heat flow

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 8, 1964, 75-80

TOPIC TAGS: heat flow, heat conduction, thermal gradient, liquid metal

ABSTRACT: Work was performed to determine the feasibility of the method of longitudinal heat flow as a means of determining the coefficients of heat conduction for liquid metal conductors. An electric heater attached to a container holding liquid metal was used to promote heat flow. Heat losses from the collar and lateral surfaces were eliminated by means of sectional heaters and insulation. Heat loss magnitude was determined by means of thermocouples. Expressions were developed quantifying longitudinal heat loss for the sample. The differential equation for heat conduction was derived, boundary conditions were evaluated, and an expression for heat conduction coefficient extracted from the resulting solution. Another expression for the conduction coefficient was developed for heat exchange with the ambient environment. Accuracy of measurement by the method described was found to

Card 1/2

ACCESSION NR: AP4044417

be about 2%. A schematic diagram of the experimental apparatus used was shown, as was a plot of the temperature dependence of heat conduction coefficient for three selected liquid metal alloys. Orig. art. has: 20 equations and 2 figures.

ASSOCIATION: Tsentral'ny*y kotloturbinny*y institut im. I. I. Polzunova (Central Steam Turbine Institute)

SUBMITTED: 27Nov63 ENCL: 00

SUB CODE: TD NO REF SOV: 001 OTHER: 004

Card 2/2

ACCESSION NR: AP4042465 S/0294/64/002/003/0392/0396

AUTHOR: Krzhizhanovskiy, R. Ye.

TITLE: Thermophysical properties of titanium and its heat conductivity when alloyed with tin and aluminum

SOURCE: Teplofizika vy*sokikh temperatur, v. 2, no. 3, 1964, 392-396

TOPIC TAGS: Soviet commercial grade titanium, titanium thermophysical property, titanium tin alloy property, titanium aluminum alloy property, titanium heat conductivity

ABSTRACT: The thermophysical properties of Soviet commercial-grade titanium, 99.6% pure titanium, and of a titanium alloy with up to 20 wt% tin or up to approximately 8 wt% Al have been investigated. All measurements were carried out in a vacuum of 10^{-4}—10^{-5} mmHg; measurement error was 2—3% for thermal conductivity coefficient λ, and about 1% for electric resistivity ρ. The temperature diffusivity coefficient a and magnitude $L = \lambda/\sigma T$, which characterizes the role of electron conductivity in a metal, were calculated from experimental

Card 1/3

ACCESSION NR: AP4042465

data based on λ, ρ, heat capacity, and specific weight. The absolute values of λ obtained were closest to those obtained by G. Lowen for RC55 titanium (99.64% Ti) and those cited by H. W. Kirby and C. Sykes for 75A titanium (99.75% Ti). The temperature dependence of λ for titanium was found to be almost constant, i.e., about 18 w/m·deg C, and increasing at higher temperatures. Additions of tin or aluminum cause λ to drop sharply to about 8.3 w/m·deg C for Ti - 20% Al and Ti - 7.5% Sn alloys. Increasing the amount of an alloying element causes a simultaneous increase in the temperature diffusivity, which at high temperatures (~800C) tends to equalize λ for various alloys (Ti-7.5% Sn which has a small temperature diffusivity coefficient). Similar behavior is also observed for ρ. The data on Ti-Sn and Ti-Al alloys show the possibility of the existence of titanium-base alloys with very low values of λ which can be utilized for heat exchange equipment and parts subjected to high thermal stresses, or for structures utilizing the good heat-insulating properties of titanium in combination with high strength. Orig. art. has: 4 figures.

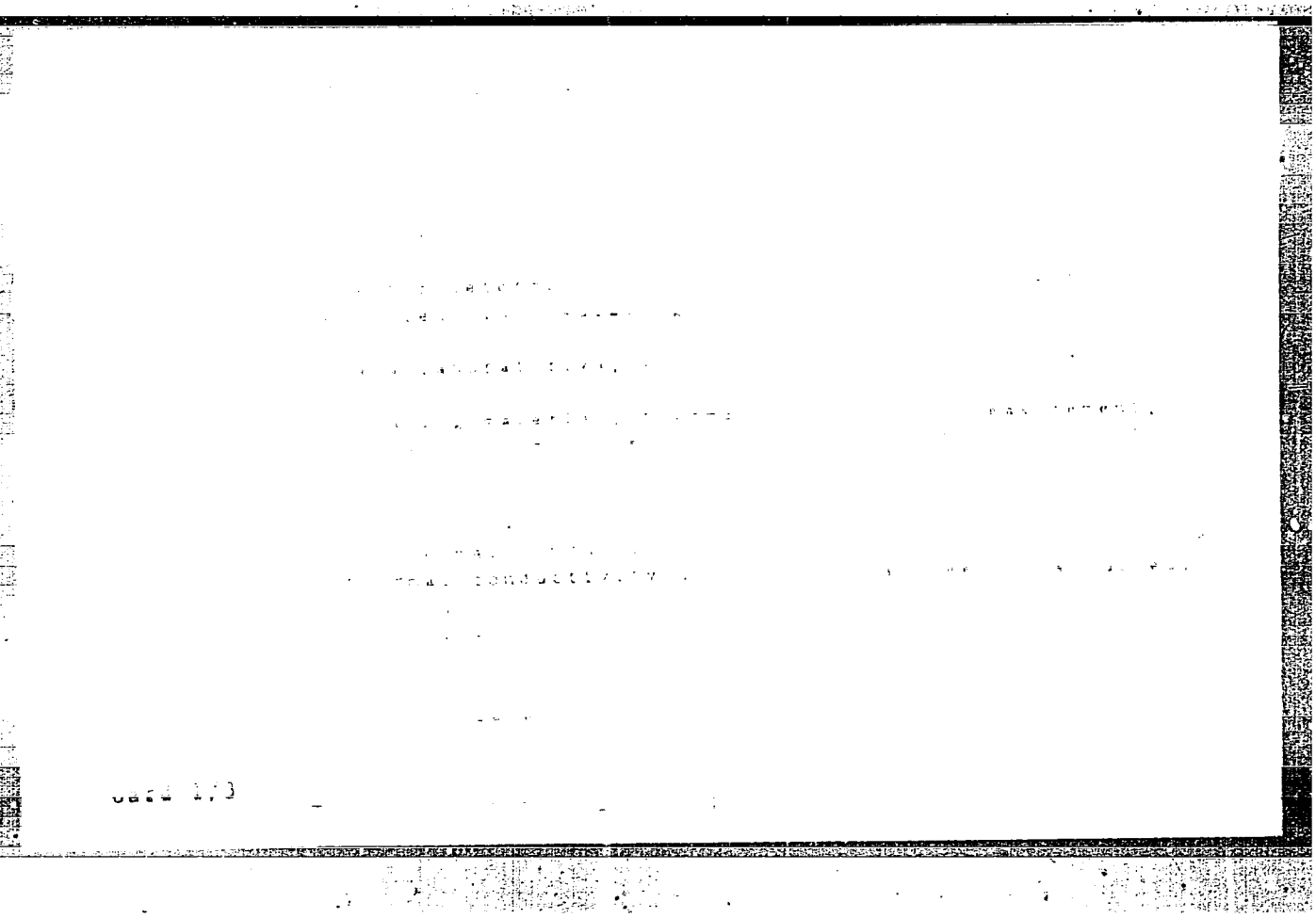
Card 2/3

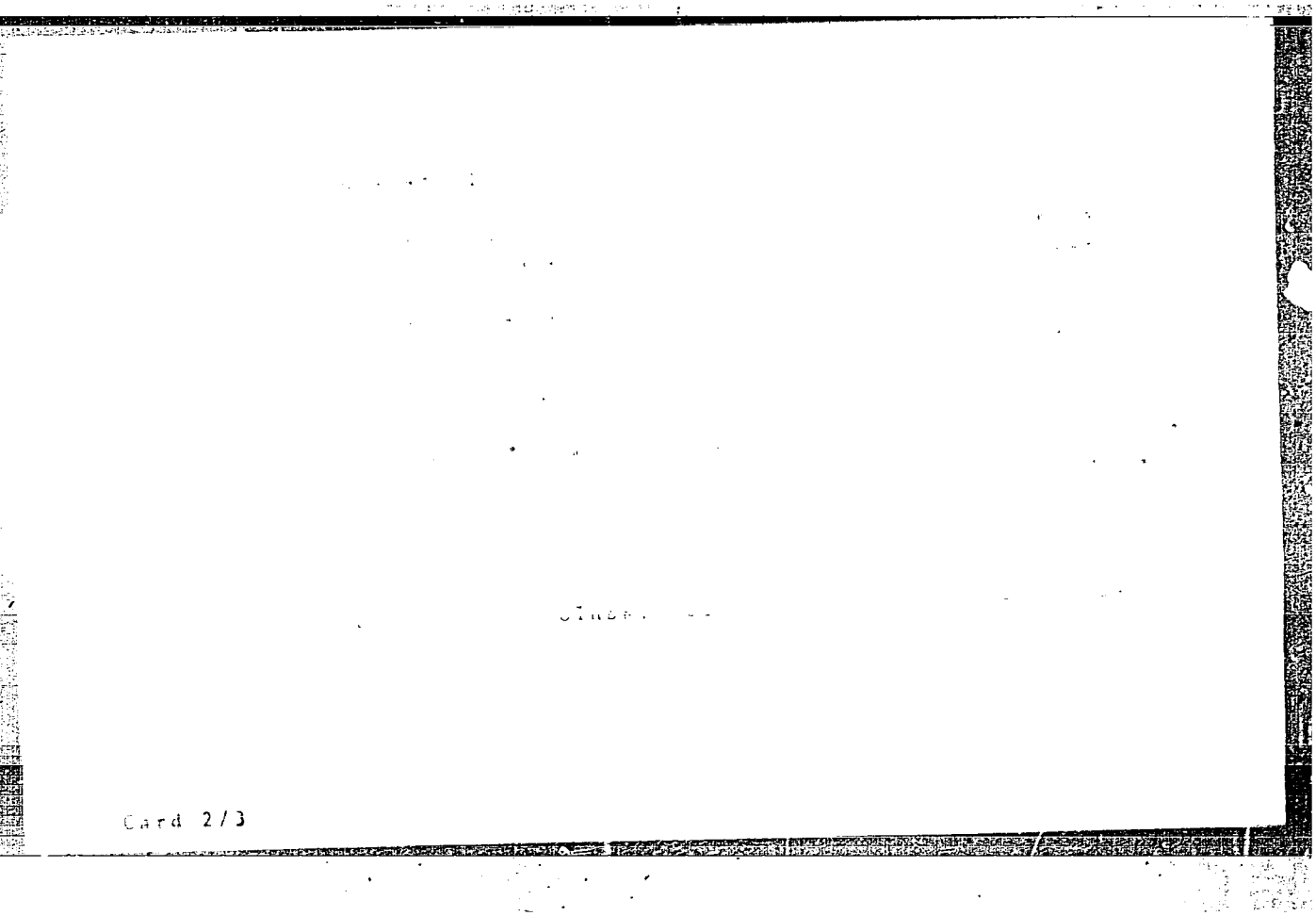
ACCESSION NR: AP4042465

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut im. I. I. Polzunova (Central Scientific Research Design and Planning Boiler and Turbine Institute)

SUBMITTED: 15Apr64	ATD PRESS: 3070	ENCL: 00
SUB CODE: MM, TD	NO REF SOV: 001	OTHER: 006

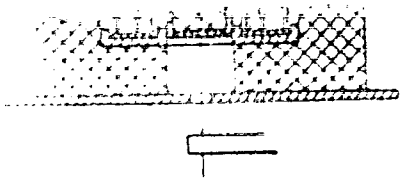
Card 3/3





Card 2/3

ENCLOSURE: 01



Card 3/

L 45570-66 EWT(m)/EWT(j) WW/RM

ACC NR: AP6021212 (A) SOURCE CODE: UR/0294/66/004/003/0355/0359

72

B.

AUTHOR: Krzhizhanovskiy, R. Ye.; Chudnovskaya, I. I.

ORG: Central Boiler and Turbine Institute im. I. I. Polzunov (Tsentral'nyy kotloturbinnyy institut)

TITLE: Investigation of thermal insulation properties of kaolin fiber

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 3, 1966, 355-359

TOPIC TAGS: kaolin, high temperature insulation, radiative heat transfer, convective heat transfer, insulating material, heat conductivity

ABSTRACT: The thermophysical properties of kaolin fibers were studied at temperatures up to 1600°C in an oxidizing atmosphere to determine this material's insulating properties at high temperatures. The tests were conducted in an insulated chamber in which a cylindrical sample was tested both in oxidizing atmosphere and in vacuum. The tests were performed on the same sample, since the packing density of fibers proved to influence the experimental results. The sample was heated by means of electrical conduction in the platinum-rhodium thread on the axis of the sample. To reduce thermal gradient, an auxiliary michrome wire heater was also used. This test rig was capable of measuring thermal conductivity coefficient in the range from 0.005 to 1.0 W/degree-meter. The testing procedure of various samples is recorded and the coefficients of thermal and temperature conductivity plotted for several packing densities. It was

UDC: 536.2.08

Card 1/2

L 45670-66

ACC NR: AP6021212

found that the thermal conductivity of the kaolin fiber has a minimum at about 160 kg/m^3 density in an oxidizing atmosphere and at about 140 kg/m^3 in vacuum, in the temperature range of 400 to 600°C. The existence of the minimum in the coefficient of thermal conductivity is ascribed to radiative heat transfer in addition to convective transfer. Orig. art. has: 4 figures.

SUB CODE: 20/ SUBM DATE: 01Feb65/ ORIG REF: 004

Card 2/2 fv

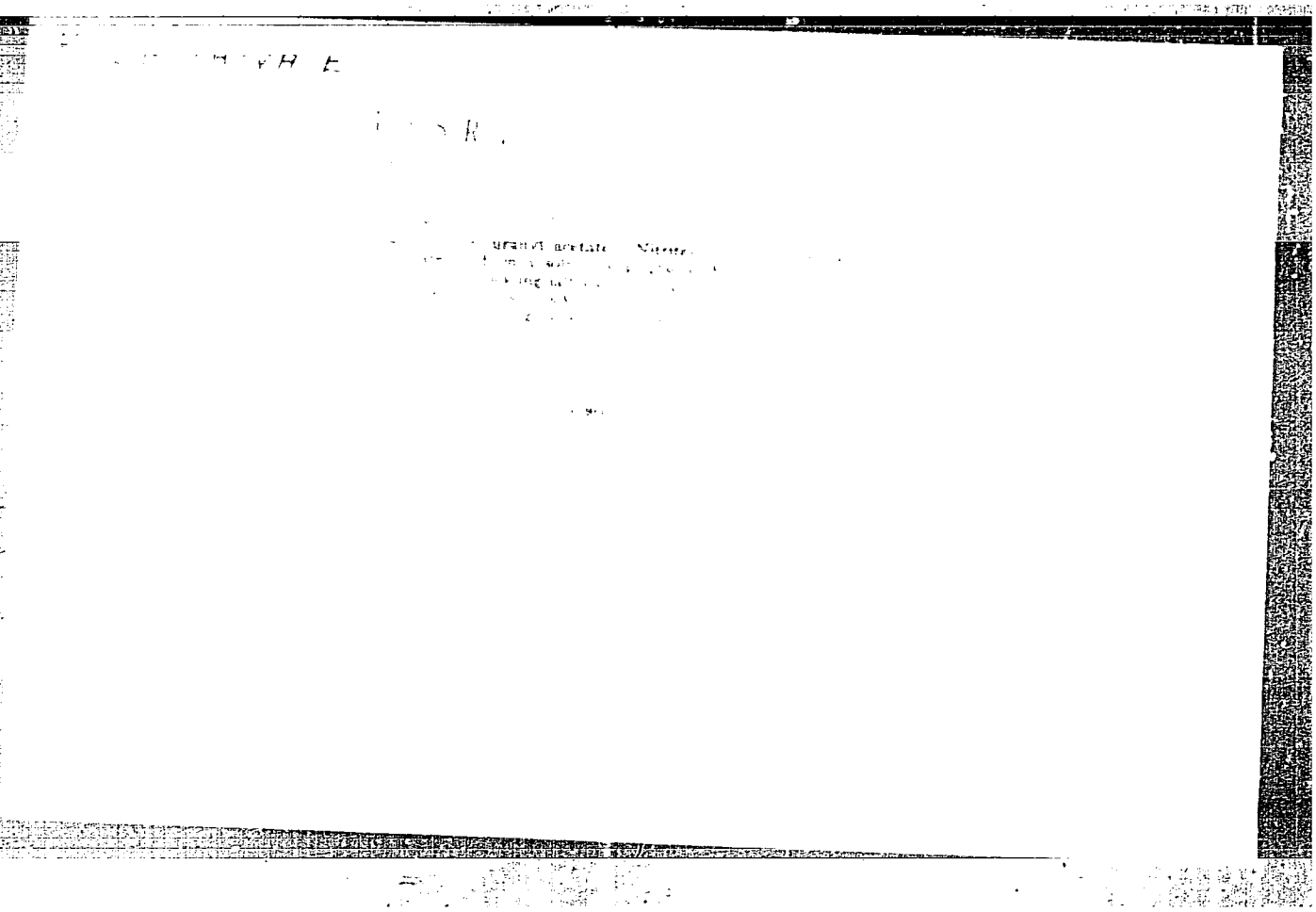
KRZHYZHANOVSKAYA, I.A.; GOL'DSHMIDT, E.M.; EGULIN, V.N.; KUKOLEV, L.G.; RYVKIND, M.D.; SHOKOTOVA, B.G.

Properties of the dust of rotary kilns and ways of using it. Trudy IUzhgiprotsementa no.4:40-54 '63.

(MIRA 17:11)

ALEKSANDROV, I.A.; GRISCHENKOV, V.G.; KHALIF, A.I.; KRZHIZHEVSKAYA, N.O.

Hydraulic calculation of grid-plate columns. Gaz.prom. 10 no.3:40-46 '65. (MIRA 18:5)



USSR

Polarographic determination of nitrates and nitrites in the salt and brine for pickling meat. R. Pletikha and R. Krshizhova. *J. Anal. Chem. U.S.S.R.* 9, 107-13(1954) (Engl. translation).—See *C.A.* 49, 4999*i*. H. L. H.

KRZHIZK, L.

Category : USSR/Electronics - Gas Discharge and Gas-Discharge Instruments H-7

Abs Jour : Ref Zhur - Fizika, No 1,. 1957, No 1721

Author : Tsigelka, I., Chernyy, L., Cusa, V., Krzhizk, I., Ladnar, I.
Title : Mechanics of Arc Discharge at High Pressure in the Stream of an Air Circuit Breaker

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 3, 499-504

Abstract : No abstract

Card : 1/1

KRZHOVINA, Frantishek [Krovina, F.]

Standardization in the Czechoslovak Socialist Republic.
Standartizatsiia 29 no.7:43-45 Jl '65. (MIRA 18:11)

1. Predsedatel' Upravleniya po standartizatsii i izmereniyam Chekhoslovatskoy Sotsialisticheskoy Respubliki.

KOSUTA, S.; KRZIC, M.; FERLUGA, D.

Fat embolism in liver steatosis. Zdrav. vestn. 34 no.5/6:100-104 '65.

1. Interna klinika medicinske fakultete v Ljubljani (predstojnik: prof. dr. S. Mahkota) i Patolosko-anatomski institut medicinske fakultete v Ljubljani (predstojnik: prof. dr. F. Hribar).

KRZISNIK, Z.

"A visit to Brkinje, Istria." p. 5. (RADIO SLOVENIJA, Vol. 2, no. 5, Feb. 1952, Ljubljana.)

SO: Monthly List of East European Accessions, Vol. 2, #8, Library of Congress August, 1953, Uncl.

P O L .

Composition of Abyssinian cabbage (*Crambe abyssinica*, Hochst.) **seeds, oil, and seed cake.** J. Kaminski (*Roczn. Chem.*, 1954, 28, A, 341—348).—In comparison with spring or winter rape, the hulled seeds of A. *abyssinian* cabbage yield a superior oil in greater proportion. Oil yields per hectare equal to those obtained from rape can be obtained with moderate soil requirements. Cake made from the seeds should have high feeding value, on account of their high protein content (~60%) and their low mustard seed oil content.

P. S. Arup.

GRGUREVIC, Matko, dr.; KRZNAR, Boris, dr.

Sarcoma of the uterus. Lijecn. vjesn. 83 no.3:239-248 '61.

1. Iz Ginekoloske klinike Medicinskog fakulteta u Zagrebu.
(UTERUS NEOPLASMS statist.) (SARCOMA statist.)

YUGOSLAVIA

Dr Mihovil DEKARIS, Dr Boris KRMAR and Dr Zivko KULCAR, Gynecologic Clinic of Medical Faculty (Ginekoloska klinika Medicinskog fakulteta) and State Institute of Health (Republicki zavod za zastitu zdravlja), Zagreb.

"Status of Uterine Cancer in the National Republic of Croatia."

Zagreb, Lijecnicki Vjesnik, Vol 84, No 8, Aug 1962; pp 765-771.

Abstract [English summary modified]: The authors' clinic hospitalizes 50% of all patients with cervical and 25% of those with uterine corpus cancer in Croatia; exhaustive statistical data indicate that diagnostic and therapeutic results have not improved in the last 10 years and detection is still lower than, e.g., in Slovenia. Epidemiologic patterns are interesting for possible etiologic studies; there is still a shortage of gynecologists and poor organizational planning and record keeping for mass screening; remedial measures are proposed. Six diagrams, 5 Yugoslav, 1 Polish and 1 US reference.

1/1

S/058/62/000/010/022/093
A061/A101

AUTHORS: Krzuk, J., Zuber, A.

TITLE: A scintillator for the recording of slow neutrons

PERIODICAL: Referativnyy zhurnal, Fizika, no. 10, 1962, 12, abstract 10B86 ("Pierwsze krajowe sympoz. zastosowań izotopów techn., Rogów, 8 - 12 czer., 1960". Warszawa, 1961, no. 14, Polish; summaries in Russian and English)

TEXT: Described is a scintillator for the recording of slow neutrons, which has been obtained by sintering natural B_2O_3 with ZnS(Ag) at 640°C. The efficiency of 10 and 24 cm^2 scintillators with respect to slow neutrons, fast neutrons, and gamma quanta amounts to 10, 0.1, and 10^{-4}%, respectively.

[Abstracter's note: Complete translation]

Card 1/1

KOZLOWSKI, M.

Pressing machines.

P. 310. (GOSPODARKA) (Lodz, Poland) Vol. 8, no. 12, Dec. 1957

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

KRZYCZYNSKI, F. ; PERSKI, J. ; MILEWSKI, S.

Repair of locomotive wheel aggregates by welding.

P. 275. (PRZEGLAD KOLEJOWY MECHANICZNY) (Warszawa, Poland) Vol. 9, no. 9, Sept. 1957

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

BITTEL-DOBRZYNSKA, Nadzieja; PRUS, Jadwiga; JANUKOWICZ-LORENZ, Halina; KRZYZANOWSKA, Olga; RYNKIEWICZ, Henryk

Radioactive iodine (I-131) tests in dwarfism syndromes. Endokr. Pol. 14 no.6:597-602 N-D '63.

1. Przychodnia Endokrynologiczna i Oddzial Endokrynologii Dzieciecej I Kliniki Chorob Dzieci Akademii Medycznej w Gdansku (Kierownik: prof. dr K. Erecinski) i Zaklad Fizyki Lekarskiej Akademii Medycznej w Gdansku (Kierownik: prof. dr J. Adamczewski).

P. T. A

Energy

491 621.311.22

Krzycki S. Electric Pumping and Storage Plants and their Role in Power System Operation.

„Elektrownie wodne pompowe i zbiornikowe oraz ich rola w eksploatacji systemow energetycznych". Energetyka, No 5 - 6, 1950, pp 162—169, 12 figs, 1 tabs.

Daily curves of load of electric power systems and various means for reducing fluctuations in load. The analysis of the degree to which various means of covering the peaks are applicable shows that combined pumping and storage electric plants provide, as the means for sudden peaks and equalising more protracted base loads for pump drive, the most general solution. A comparison, according to the number of hours per diem during which advantage is taken of the peak of production costs per kilowatt in various electric peak plants, points to the advantage of combined pumping and storage plants. Technical solutions of combined hydro-electric pumping and storage plants Determination of the efficiency of casual accumulation of energy. Installed capacity in electric pumping plants in various major countries, and description of the equipment of major plants of this type. Automatic starting of combined electric pumping and storage plants Opportunities available for the construction of combined pumping and storage plants in Poland.

P.T.A. Energy

643 6209

Krzycki S. Methods for the Prevention of Peak Loads in Power Practice.

„Sposoby zwalczania szczytów obciążeń w energetyce". Energetyka No 11--12, 1950, pp. 397—402, 7 figs.

Specific working conditions in power practice (inability of accumulating electric energy reserves, and lack of uniformity in consumption, not only on certain days of the week and periods of the day and year, but also as the result of unforseen phenomena) and influence of these conditions on the increase in investment expenditure. The tendency to keep peak loads in check by building special peak load plants. Control of peak loads by means of proper regulation of consumers' demand.

1134 621.131.63

Krzycki S: Heat Pumps and Their Importance in Power Practice.

„Pompy cieplne i ich znaczenie dla energetyki" Energetyka. No 1--2, 1951, pp. 6—12, 9 figs., 2 tabs.

Thermal cycle in the heat pump. Initial obstacles to recommending these pumps for general use. Efficiency factors of heat pumps — theoretical and actual. Influence of ultimate temperatures on the efficiency factor. Example of a heating installation based on the work of heat pumps. Heat-pumps as a means of raising the degree of heat utilisation in power stations. Dual application of heat pumps — for heating and cooling. Increased interest in the introduction of heat pumps into everyday use. Possibilities of using heat pumps in power practice.

KRZYCKI, S.

Cooling of turbogenerators by hydrogen. p. 78.

ENERGETYKA. Ministerstwo Energetyki Stalinogrod. Vol. 9, no. 2, Mar./Apr. 1955.

SOURCE: East European Accessions List (EEAL), Library of Congress Vol. 5, No. 7, July 1956.

KRZYCKI, S.

KRZYCKI, S. Trends in building switchboards. p. 299.

Vol. 9, No. 6, Nov./Dec. 1955
ENERGETYKA
TECHNOLOGY
Warszawa, Poland

So: East European Accession, Vol. 5, No. 5, May 1956

[illegible], S.

Weisweiler Electric-Power Plant. p. 91.
([illegible]. Vol. 10, no. 2, Mar/Apr. 195[illegible], Warszawa, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. , no. 12, Dec. 1957. Uncl.

KRZYCKI, S.

England's power industry in light of the last report of the Central Electricity Authority. p.102.

((ENERGETYKA. Vol. 11, No. 2, Mar.Feb. 1957. Warszawa, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 10, October 1957. Uncl.

KRZYCKI, Stefan, mgr. inz.

Development of the electric-power system in the German Democratic Republic. Energetyka Pol 14 no.2:51-54 '60. (EEAI 9:6)
(Germany, Eastern --Electric power)

KRZYCKI, Stefan, mgr inz.

Some indications for the development of the Czechoslovak power system according to the next Five-Year Plan. Energetyka Pol 14 no.10:317-319 O '60. (EEAI 10:3)
(Czechoslovakia--Electric power)

KRZYCKI, Stefan, mgr inz.

Development of electric power plants in Great Britain. Energetyka Pol 15 no.2:56-57 F '61. (EEAI 10:7)
(Great Britain--Electric-power plants)

KRZYCKI, St. Mgr inz.

Power engineers in the German Democratic Republic are searching for locations for new pumping power plants. Energetyka Pol 15 no.7:201 Jl '61. (EEAI 10:9/10)

(Electric power-plants)

KRZYCKI, Stefan, mgr., inz.

Existing international cooperation of power systems in European countries. Energetyka Pol 15 no.12:366-370 D '61.

1. Czlonek Kolegium Redakcyjnego "Energetyka".

(Electric power)

KRZYCKI, Stefan, mgr. inż.

Large pump power plants in Western Europe. Energetyka Pol 16 no.6:Suppl.:Biul Instyt Energet 4 no.5/6:180-181 Je '62.

KRZYCKI, Stefan, mgr inz.

The interconnected electric power system of the Soviet Union.
Energetyka Pol 16 no.10:298-304 O '62.

KRZYCKI, Stefan, mgr inz.

Large generator systems in future thermal electric power plants of the U.S.S.R. Energetyka Pol 16 no.11: 346-347 N '62.

KRZYCKI, St., mgr inz.

The first year of utilization of the combined power systems in Great Britain and France. Energetyka Pol 16 no.11:350 N '62.

KRZYCKI, Stefan, mgr inż.

Effect of summer daylight time on the flattening of the Polish power system load curve and the advantages of its application. Energetyka Pol 17 no.4:101-106 Ap '63.

KRZYCKI, St., mgr inz.

Experiences from heretofore cooperation of the electric power systems of the member countries of the Council for Mutual Economic Assistance. Energetyka Pol 17 no.6:165-168 Je '63.

KRZYCKI, Stefan, mgr ins.

Growing importance of electric power demand in households in Great Britain. Energetyka Pol 17 no.11:346-348 N '63.

KRZYCKI, Stefan, mgr inż.

Cooperation of the electric power systems of Denmark, Finland, Norway, and Sweden. Energetyka Pol 18 no.4:120-122 Ap'64

KRZYCKI, Stefan, mgr inz.

"Development prospects of power engineering" by [mgr. inz.] Sergiusz Minorski. Reviewed by Stefan Krzycki. Energetyka Pol 17 no.10:324 O'63.

KRZYCKI, Stefan, mgr inz.

Experiences in electric power engineering gathered during the last winter. Energetyka Pol 17 no.8:243-245 Ag '63.

KRZYCKI, Stefan, mgr inz.

Various indexes concerning power management during the years 1956-1960. Energetyka Pol 18 no. 2: 53-56 F '64.

KRZYCKI, Stefan, mgr inz.

Expected development of electric power demand in countries of the Organization of Economic Cooperation and Development. Energetyka Pol no.6:178-180 Je '64.

KRZYCKI, Stefan, mgr inż.

The periodical "Energetyka and the development prospects of Polish power engineering. Energetyka Pol 18 no.12:360-361 D '64.

1. Editorial Board of "Energetyka," Warsaw.

KRZYCKI, Stefan, mgr inz.

A conference on brown coal in power engineering. Energetyka Pol 19 no.3:91-92 Mr '65.

9,257/

39135
S/058/62/000/006/111/136
A062/A101

AUTHOR: Krzyoki, Z.

TITLE: A cross coupler with a ferrite filled aperture

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6,1962, 22, abstract 6Zh150 ("Rozpr. Elektrotechn." 1961, v. 7, no. 3, 355 - 364, Polish; Russian and English summaries)

TEXT: The coupling coefficient of two crossed rectangular waveguides through a coupling aperture filled with ferrite is calculated. The waveguides are in contact through the broader walls. The value of the coupling is determined by the non-diagonal component of the ferrite magnetic permeability tensor and attains a maximum value at the ferromagnetic resonance. Using this dependence, the considered system may be applied for measuring the width of the ferrite resonance line and the spectroscopic splitting factor. Discordance between calculated and experimental data does not exceed 1%. Similar arrangements can also be applied as a broad band selective element with a magnetically controlled coupling.

[Abstracter's note: Complete translation]

V. K.

Card 1/1

S/194/62/000/002/082/096
D271/D301

9.2571
9.1300

AUTHOR: Krzycki, Z.

TITLE: Measuring the resonance line width of ferrites in a ferrite with diaphragm

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 2, 1962, abstract 2-7-148m (Bull. Acad. polon. sci. Sér. sci. techn., v. 9, 1961, no. 2, 105-110)

TEXT: The problem is considered of two waveguides joined by a diaphragm with an aperture filled by ferrite magnetized by a transverse magnetic field. The aperture can be represented as a pair of dipoles: Electric and magnetic, excited by the field of the primary waveguide. The aperture, in turn, excites the secondary waveguide. Fields induced in the secondary waveguide are determined, assuming that both waveguides are rectangular, with TE_{10} waves. If the planes of transverse cross-sections of both waveguides coincide, excited field is fully determined by the diagonal component of the magnetic permeability tensor of the ferrite, μ; if the secondary wave-

Card 1/2

guide is turned by 90° relatively to the primary waveguide, its field is determined by the non-diagonal component of the tensor k. Small ferrite spheres were used in the experimental work; they were placed in the aperture of the diaphragm, whose dimensions were considerably greater than those of the spheres. In these conditions, only in the second case the excited field is proportional to the k component of the tensor; in the first case the waveguide is excited through the diaphragm aperture and a reliable measurement of line width by means of μ is not possible. Results obtained by this method are in good agreement with those obtained by measurements in a cross-shaped configuration and in a resonator. Effective values of the Landé factor were also measured. Measurements were performed using a standard apparatus, at 9300 Mc/s. 6 references. (Polish Institute of Basic Technical Problems.) [Abstracter's note: Complete translation.]

Card 2/2

24948
P/019/61/010/002/008/009
D253/D303

6.4300

AUTHOR: Krzycki, Z.

TITLE: A wide band ferrite isolator for the 3 cm frequency band

PERIODICAL: Archiwum elektrotechniki, v.10, no. 2, 1961, 599-601

TEXT: This is a description of a ferrite wide band isolator type IXL-1, designed from home market materials at the Magnetic Materials Laboratory of IPPT, PAN. Its operation is based on the effect of the waveguide field displacement which is produced by a magnetized ferrite plate. The principle of its operation is illustrated in Fig. 2 which shows the simplified cross-section of the isolator and the electric field distribution for dominant mode H_{10}. The curve E_1 shows the electric field distribution of the incident wave, propagating from generator to the load. E_2 shows the field of the reflected wave in the direction from the load to the generator wave. In the plane of the absorbing plate, the incident wave

Card 1/3

A wide band ferrite isolator...

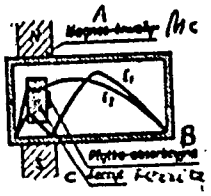
has a zero electric field and propagates, therefore, without attenuation. The electric field of the reflected wave has, however, a value near the maximum and is attenuated in the absorbing plate. The position of the ferrite plate in the waveguide, its overall dimensions and shape and the absorbing plate have been adjusted experimentally. The technical data of the isolator are as follows: Frequency - 8600 to 9800 Mc/s. Minimum pass attenuation 0.5 db. Maximum pass attenuation 0.7 db. Maximum stop attenuation 35 db. Minimum stop attenuation 25 db. WFS (VSWR) (from both ends) < 1.15. Maximum average power 5 w. Maximum pulse power 1 kw. Waveguide 1 inch x 0.5 inch, length 80 mm, weight 0.8 kg. There are no difficulties in changing the parameters according to the requirements within the above ratio of the stop to pass attenuation. The isolator was engineered from the nickel cadmium ferrite as designed by the magnetic materials laboratory, IPPT PAN. The ferrite has the following parameters: Saturation magnetization 4900 gauss. The resonance line width in the 3 cm frequency band 1400 e. Spectroscopic diffraction coefficient 2.09, curie point 300°C. The type IXL-1 isolator has been designed to work primarily in small power

A wide band ferrite isolator...

measurement circuits. It is assumed, however, that because of its high curie point, the dissipation power could be considerably increased without any detrimental changes in its properties and without any damage to the isolator itself. There are 3 figures and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: S. Weisbaum, H. Seidl, A field displacement isolator, Bell System Technical Journal, 1956, No. 4, 877-898.

SUBMITTED: November 23, 1960

Fig. 2 Legend: Simplified diagram of isolator; A - Magnet; B - Absorption plate; C - Ferrite



Card 3/3