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ZOZULYA, A.P.

5(4)

AUTHORS: Vasil'yev, V. P., Korablova, V. D., Yatsimirskiy, K. B. SOV/153-58-3-30/30

TITLE: Conference Discussion on the Methods of Investigating the Complex Formation in Solutions (Soveshchaniye-diskussiya po metodam izucheniya kompleksoobrazovaniya v rastvorakh)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 3, pp 173 - 174 (USSR)

ABSTRACT: From February 18 to 21, 1958 a conference discussion took place at the town of Ivanovo: it dealt with the subjects mentioned in the title. It was called on a decision of the VIIth All-Union Conference on the Chemistry of Complex Formations. More than 200 persons attended the conference, among them 103 delegates from various towns of the USSR. At the conference methods of determining the composition of the complexes in solutions were discussed, as well as the methods of calculating the instability constants according to experimental data and problems concerning the influence of the solvent upon the processes of complex formation.

1. In the lecture by A. K. Babko and N. M. Tananayko, "Physical and Chemical Analysis of the Systems With 3 Colored Complexes in the Solution", the results of a systematic investigation in copper-quinoline-salicylate, as well as in copper-pyridine-salicylate systems by means of the optical method were dealt with. In the lecture by Ya. A. Fialkov the idea of a further investigation of the complex formation processes in solutions was developed. Besides the determination of the composition and stability of the complexes also the physical and chemical properties, the chemical nature and the structure of the complex compounds must be investigated . . . . . .

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1. I. Alekseyeva and K. B. Yatsimirskiy in their lecture "Investigation of the Polymerization of Iso-Poly Acids in Solutions" mentioned experimental results of the investigation of the polymerization in solutions of molybdic acid. The authors proved that especially the molybdic acid within a certain range of the pH values and the concentrations exists as a number of compounds that can be expressed by an overall formula $MoO_4(HMoO_4)^{n-2}$. In the lecture by N. V. Akel'rud and V. B. Spivakovskiy investigation results on basic salts taking into account the complex formation in solutions by means of the potentiometric method were mentioned for systems with zinc, cadmium and indium. In the evaluation of their results the authors employed the method of the table differences. The calculation of the consecutive constants was carried out according to the interpolation formula by Newton. M. A. Chernyavskiy held a lecture on "pH Measurement Method of the Solutions in Combination With the System Analysis of the Solubility Diagram of the System Cu^{2+}-HCl - H_2O in Investigating Complex Copper Compounds in Saturated Solutions". It was found that the substance at the bottom of the liquid is more basic than the solution: furthermore, the increased acidity of the solution from the viewpoint of the formation of hydroxy-chloro complexes in the solution was explained. V. I. Kuzmetsov opened the discussion with his lecture: he pointed out the necessity of utilizing the concepts worked out in the investigations of the polymerization in organic chemistry in the chemistry of polynuclear complexes. A. A. Grinberg thinks that the new approach of the hydrolysis

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investigation as developed by the Scandinavian school is of high value. He also pointed to the necessity of studying the kinetics of the polymerization process and a quantitative determination of the strength of the polymers. A. K. Babko pointed out that the study of the polymer structure was necessary. N. P. Komar' mentioned in his lecture that the rather widely spread polymerization type according to the scheme "nucleus + chain members" is not obtained in all cases. The following scientists took part in the discussion: V. N. Tolmachev, A. V. Ablov, I. S. Mustafin, I. V. Tananayev and K. B. Yatsimirskiy. A. K. Babko then discussed in his lecture "Methods of Determining the Dissociation Constant of the Complex Groups in Solutions" the main principles of determining the instability constants. N. P. Komar' discussed in his lecture "Calculation Methods of the Instability Constants of the Complex Compounds According to Experimental Data" the possibilities of using the known calculation methods of the instability constants for various cases of the complex formation in solution. If several mononuclear complexes are formed the displacement method by Abegg and Bodlender (completed by A. K. Babko) cannot be recommended for the calculation of the instability constant. The lecturer discussed the dissolution methods of the polynomials proposed by B'yerrum, Leden, Rossotti, Sketchard, Edmolley and other authors. The constants calculated in this way are not very accurate. It was proved that the method of successive approximations can lead to wrong conclusions as to the chemical processes taking place in the system investigated. The most probable value of the physical constants can be obtained by the method of the least squares. N. V. Pitsyna, Ye. N. Tekster and L. I. Vimegradova described the determination methods of the instability constants of the oxalate complexes of niobium, uranium and iron which are based on the investigation of the equilibrium displacement of the complex formation by silver ions. E. K. Bol'shakova, I. V. Tananayev and G. S. Savchenko held a lecture on "The Role of the Time Factor in the Investigation of the Complex Formation". In the discussion on the lectures A. A. Grinberg mentioned that due to the slow adjustment of the equilibria the methods discussed of determining the instability constants (palladium and cobalt complexes) can often not be employed. A. V. Ablov pointed out the necessity of devising direct methods of proving the existence of intermediate forms in a step-wise complex formation. K. B. Yatsimirskiy mentioned that the instability constants of slowly dissociating complexes can be calculated from thermochemical data. L. P. Adamovich, A. M. Golub among others took part in the discussion on the lectures. A. K. Babko requested inclusion in the next conference on the chemistry of complex compounds a lecture in which various calculation methods of the instability constants should be discussed by the example of actual cases. This should clarify to which divergencies of the values of the constants different methods of evaluating the experimental data can lead. N. P. Komar' stressed that in the determination of the instability constants all chemical equilibria should be taken into account that render complex the complex formation process in the solution, especially the hydrolysis processes of the central ion and the addendum. In the lecture delivered by V. M. Peshkova and A. P. Zosulya "Application of the Distribution Method to the Investigation of the Stability Constants

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of Some Thorium Complex Compounds" results obtained from the experimental investigation of the distribution of thorium compounds in the systems: acetylacetone - benzene - water, and 2-oxy-1,4,-naphthoquinone - chloroform - water were given. From these data the instability constants of the thorium complexes with acetyl-acetone and 2-oxy-1,4-naphthoquinone were calculated. I. V. Tananayev, G. S. Savchenko and Ye. V. Gonsharov held a lecture on the application of the solubility method in the determination of the stability of complex compounds in solutions. In this lecture also other methods of investigating complex formation processes in the solution were discussed (pH measurement, measurement of the optical density, as well as of the heat of mixing). B. D. Berezin held a lecture on the "Application of the Solubility Method in Studying the Phthalocyanine Complexes of Metals". He used the determined quantitative characteristics of the reaction of the transition of the phthalocyanides of cobalt, nickel, copper and zinc, as well as of the free pathalocyanine into the sulfuric acid solution for the theoretical reasoning, and as an experimental proof of the existence of

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π-bonds in the complexes investigated. These characteristics also served him as a proof of new electronic formulae of phthalocyanine and its complex derivatives. In the lecture delivered by I. L. Krupatkin on "The Method of the Two Solvents as a Method of Investigating the Formation and Properties of Organic Complexes" it was proved that this method makes it possible to determine the number of complexes formed in the system, their composition and relative stability. V. I. Kuznetsov, A. K. Babko, N. P. Komar', I. S. Mustafin and Ya. I. Tur'yan took part in this discussion. In the lecture delivered by A. A. Grinberg and S. P. Kiseleva on the complex palladium compounds (II) with a coordination number above four it was proved that in the case of a large chlorine and bromine ion excess complexes with the coordination number 5 are formed. The instability constants of these complexes were estimated. L. P. Aimanovich mentioned a new manipulation in the spectrophotometric investigation of the complex compounds that can be used in systems with the formation (or predomination) of one single complex. This method makes it possible to determine the composition and instability constant

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of the complex. In the lecture delivered by K. B. Yatsimirsky and V. D. Korablova the application of the theory of crystalline fields for the determination of the composition and structure of the chloride complexes of cobalt, nickel and copper according to the absorption spectra of these complexes was discussed. It was proved that in a hydrochloric acid concentration above 5 mole/liter in the solution there exists an equilibrium between the tetrahedric and octahedric form of the cobalt chloro complexes. Ya. P. Kazarenko proved in his lecture "The Application of Radioactive Isotopes in the Investigation of the Solvation Equilibrium in Solutions of Complex Compounds" the possibility of using data on the isotope exchange to clarify the structure of the complex and mechanism of the hydration processes. V. Kizmov mentioned in his lecture the use of radioactive isotopes in the study of tin and antimony complexes in non-aqueous solutions. A. V. Ablov, V. M. Tolmachev, V. I. Kuznetsov and A. M. Golub took part in the discussion of the lectures. The usefulness of employing the theory of the crystalline fields in explaining the results obtained from the absorption spectra of the com-

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plex compounds was stressed. In the lecture delivered by I. A. Shek on "The Investigation of the Complex Formation by the Method of the Dielectric Permeability and the Polarization" the principles of the methods mentioned were presented. This method was employed for investigating the compounds of the type of the "affiliation" products. The lecture delivered by I. A. Shek and Ye. Ye. Kriss "Employing the Method of the Dielectric Constant for Investigating Complex Compounds of the Type of Crystal Solvates in Solutions" dealt with the investigation of the solvates of lanthanum and cerium chlorides with ketones, as well as with the study of the compounds formed in heterogeneous systems with tributyl phosphate and nitric acid. V. F. Toropova gave in her lecture "The Polarographic Method of Investigating the Complex Formation in Solutions" a survey of the applications of the polarographic method in the study of the complex compounds, and illustrated several fine characteristic features of this method. In the lecture delivered by T. N. Gusarokova "The Cryoscopic Method of Investigating the Complex Formation Reactions" a survey of the possibilities of the cryoscopic method was given, and its applicability in the study of several complex compounds of stannic chloride with organic substances was proved. A. M. Golub described the results of his investigations of thiocyanate complexes of several metals. A vivid discussion took place as the lectures held. Ya. A. Fialkov and Yu. Ya. Fialkov considered the cryoscopic method of investigating complex compounds to be of considerable value. K. B. Yatsimirskiy pointed out that the publication of the surveys on individual methods of investigating the complex formation reactions would be desired; this concerns especially the polarographic method. The cryoscopic method should be brought to a level that makes the calculation of the equilibrium constants of the processes to be investigated possible. The problem of the method of evaluating the experimental results becomes more and more important. Many scientists use the instability constants without taking into account the way in which they had been obtained. The calculation methods employed by A. M. Golub are one step back, as compared to those employed at present. In his lecture N. P. Komar' pointed out the extremely great importance of the mathematical evaluation of the results obtained, as well as of the plotting of curves. A. E. Bakke suggested selecting one or two systems that are experimentally well investigated, and to evaluate the results obtained according to different methods so that it is possible to check and evaluate them. Ya. I. Tur'yan took part in the discussion. Ya. A. Fialkov discussed in his lecture "The Effect of the Solvent on the Complex Formation Process as Well as on the State of Equilibrium in the Solutions of Complex Compounds" the influence exerted by the solvents upon the molecular state, upon the solvation of the system components, upon the stabilization of the complexes formed in the system, upon the stepwise dissociation of the complexes and upon a number of other processes. The influence exercised by the dielectric constant upon the complex formation process was discussed. It was concluded that a direct relation does not exist, and that the chemical nature of the solvent must be taken into account. A. V. Ablov and L. V. Kozareva held a lecture on "The Spectroscopic Investigation of Nickel Cobalt 'Pyridinates' in Various Solvents". The instability constants of the complexes were determined and it was proved that the

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stability of the 'pyridinates' is changed in dependence on the solvent. Ya. I. Tur'yan in his lecture "The Influence of the Solvent Upon The Composition and Stability of Complex Ions" discussed the polarographic investigation method of the chloride and thiocyanate complexes of lead in aqueous ethanol solutions at different content of the non-aqueous solvent and at a constant ionic strength. A step-wise character of the complex formation was found as well as the instability constants of the complexes. The influence of the dielectric constant of the solution on the stability of the investigated complexes was proved. In the lecture by V. P. Vasil'yev on the "Investigation of Aquo Complexes in Mixed Solvents" the main attention was devoted to the necessity of the qualitative recording of the solvation effects in the complex formation. The applicability of the polarographic method in the determination of the composition and stability of the aquo complexes in mixed solvents was proved and experimental material on the thermodynamics of the dissociation of the cadmium-aquo complexes in aqueous ethanol solutions was mentioned. V. N. Tolmachev, V. I. Kuznetsov

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and I. V. Tananayev stressed in their lectures the necessity of a more complete and general investigation of the solvation processes. A. K. Babko and A. M. Golub pointed out the great importance of the investigations of the complex formation equilibria in non-aqueous solutions, and made several critical comments on the lecture by Ya. I. Tur'yan. The following scientists took part in this discussion: L. P. Adamovich, G. I. Khotyamovskiy, A. P. Mokhvin and A. G. Bustakov. At the final meeting of the conference A. A. Grinberg, Corresponding Member, AS USSR, said in his speech that such a conference was very urgent. A detailed discussion of the determination methods of the composition of the complexes, as well as of the method used in the study of the quantitative characteristics of the stepwise complex formation was extremely useful for all who attended this conference.

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AUTHORS: Peshkova, V. M., Zozulya, A. P. SOV/156-58-3-16/52

TITLE: The Investigation of the Complex Formation in the System Th^{4+}-Acetylacetone-H_2O-C_6H_6 by Means of the Distribution Method (Issledovaniye kompleksoobrazovaniya v sisteme Th^{4+}-atsetilatseton-H_2O-C_6H_6 metodom rasprodeleniya)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Khimiya i khimicheskaya tekhnologiya, 1958, Nr 3, pp. 470-474 (USSR)

ABSTRACT: The low solubility of many internal complex salts complicates and even prevents the determination of their constants of formation by the usual methods (optic and potentiometric). It is, however, easy to determine these constants by means of the distribution and extraction method, as these compounds may be extracted by organic solvents. The results of the radiochemical, spectrophotometric and extraction methods agree well. The distribution of Th^{4+} in the system C_6H_6-H_2O-acetylacetone at 25 $\pm$ 0,1° was investigated; the ionic strength in the aqueous phase amounted to 0,1. A certain amount of $Th(ClO_4)_4$ solution was mixed with the calculated amount of NaOH- and $NaClO_4$ solution and diluted with water to 15,0 ml. 15,0 ml solution of acetylacetone in benzene were added to this. The

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The Investigation of the Complex Formation in the System Th^{4+}-Acetylacetone-H_2O-C_6H_6 by Means of the Distribution Method

sample was stored in a thermostat for usually 20 hours to establish equilibrium. The phases were separated by centrifuging. The authors determined thorium in both phases by means of morin; the pH of the aqueous phase was determined using a glass electrode. The concentration of the free acetylacetone (A) in the aqueous phase was calculated according to the equation of Rydberg (Ref 3). The dependence of the ratio of the distribution of Th^{4+} on the concentration of the free acetylacetone ions is shown graphically in diagram 1. The numerical results are given in 4 tables. The coefficients of the distribution of ThA_4 and the constants of the formation of the various thorium-acetylacetonate complexes are given in table 5. There are 3 figures, 5 tables, and 29 references, 2 of which are Soviet.

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The Investigation of the Complex Formation in the System Th^{4+}-Acetylacetone-H_2O-C_6H_6 by Means of the Distribution Method

ASSOCIATION: Kafedra analiticheskoy khimii Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Chair of Analytical Chemistry of Moscow State University imeni M. V. Lomonosov)

SUBMITTED: November 1o, 1957

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ZOZULYA, A. P.: Master Chem Sci (diss) -- "A study of the stability of complex compounds of thorium, using the distribution method". Moscow, 1959. 13 pp (Moscow State U im M. V. Lomonosov, Chem Faculty, Chair of Analytical Chem), 120 copies (KL, No 14, 1959, 118

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5(4), 5(2) SOV/78-4-2-22/40

AUTHORS: Zozulya, A. P., Peshkova, V. M.

TITLE: Investigation of Complex Formation in the System 2-Oxy-1,4-Naphthoquinone-Th^{4+}-$CHCl_3$-H_2O by the Distribution Method (Issledovaniye kompleksoobrazovaniya v sisteme 2-oksi-1,4-naftokhinon-Th^{4+}-$CHCl_3$-H_2O metodom raspredeleniya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 2, pp 379-392 (USSR)

ABSTRACT: In the system 2-oxy-1,4-naphthoquinone-Th^{4+}-$CHCl_3$-H_2O the complex-forming processes were investigated by the distribution liquid-liquid at 25°C. For determining the distribution coefficient of Th^{4+} in the systems $CHCl_3$-H_2O and C_6H_6-H_2O the radioactive indicator Th^{234} was used. The dissociation constant of 2-oxy-1,4-naphthoquinone and the distribution coefficient of this compound in the systems mentioned were determined at 25°±0.1° and the ionic strength of $\mu = 0.1$. The following values were found:

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Investigation of Complex Formation in the System 2-Oxy-1,4-Naphthoquinone-Th^{4+}-$CHCl_3$-H_2O by the Distribution Method

$pK_{diss} = 2.38 \pm 0.1$; $K_{distr.\ CHCl_3-H_2O} = 183.3 \pm 4.6$;

$K_{distr.\ C_6H_6-H_2O} = 102.8 \pm 1.5$.

The absorption spectra of the aqueous solutions of 2-oxy-1,4-naphthoquinone were recorded at various pH values and it was found that at $pH < 2$ the compound is undissociated and at $pH > 5$ completely dissociated. The complex formation of thorium with 2-oxy-1,4-naphthoquinone in an aqueous solution and in organic solvents was investigated. The complex formation proceeds gradually in the aqueous phase without the formation of polynuclear complexes, hydrolysis products, or other polymers. The consecutive complex-forming constants of thorium with 2-oxy-1,4-naphthoquinone ions were determined:

$K_1 = (5.83 \pm 0.9).10^4$; $K_2 = (1.65 \pm 0.1).10^4$; $K_3 = (1.30 \pm 0.1).10^4$;

$K_4 = (1.33 \pm 0.1).10^3$; $\varkappa_1 = 5.83.10^4$; $\varkappa_2 = 9.62.10^8$; $\varkappa_3 = 1.25.10^{13}$;

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Investigation of Complex Formation in the System 2-Oxy-1,4-Naphthoquinone-Th^{4+}-$CHCl_3$-H_2O by the Distribution Method

$K_4 = 1.56 \cdot 10^{16}$. ($25^\circ \pm 0.1^\circ$; $\mu = 0.1$). A comparison of the complex-forming processes in the system acetyl acetone-Th^{4+}-$CHCl_3$-H_2O to those of 2-oxy-1,4-naphthoquinone-Th^{4+}-$CHCl_3$-H_2O shows that the second complex is less stable. The distribution constant of this complex was determined in the system $CHCl_3$-H_2O (at 25° and $\mu = 0.1$); $\lambda'_4 = 13.16 \pm 0.7$.

There are 11 figures, 9 tables, and 28 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: January 11, 1958

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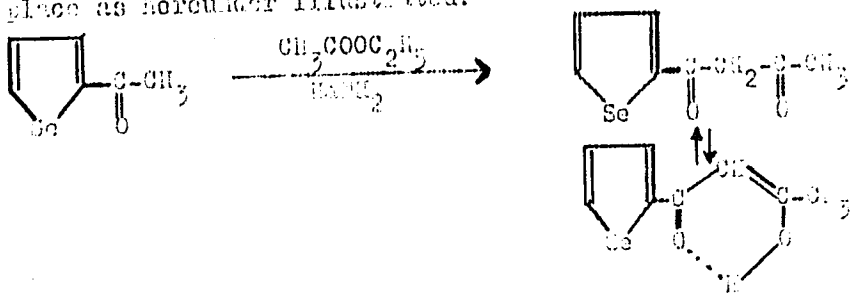
5(3)

Author: Kondyr, A. [illegible], [illegible], [illegible]
Reshkova, T. I., Yur'ev, Yu. K.

Title: [illegible] Selenium [illegible] Acyl Pyrones (Pyrones) [illegible] Authors [illegible]

Publication: [illegible] Ser. Khimicheskaya, 1959, Vol 14, No 1, p. 77-[illegible] (USSR)

[illegible] the [illegible] of selenocyclo-[illegible]-one (I) which was obtained for the first time by the authors of the present paper, took place as hereunder illustrated:



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Some Characteristics of
Selenenoyl-2-Acetone and Benzoyl Acetone SOV/79-14-1-9/32

The synthesis is very accurately described. Compound (I) was obtained as a viscous straw-yellow oil with boiling point 146 - 146.5°/7 mm, that could be crystallized - melting point 33 - 33.5° (from alcohol). Benzoyl acetone was synthesized according to data found in publications (ref 4) and had a melting point of 56.5 - 59° after repeatedly re-crystallization from ethanol. The absorption spectra of the aqueous solutions of both compounds were investigated with different p_H-values between 2 and 11. The respective curves are shown in Fig 1. The dissociation constants of both compounds were found in two ways: by computations from the absorption curves and graphically from the dependence of the optical density of the solutions on the p_H-value at different wave-lengths. The results are specified and show good agreement. A value of $p_{K_{diss}} = 8.96 \pm 0.05$ was found for benzoyl acetone, whereas for selenenoyl-2-acetone it is $p_{K_{diss}} = 8.55 \pm 1.0$ (ionic strength being $\mu = 0.1$ in the solution). Also the distribution

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constants of both compounds in different systems at 25 ± 0.1° and μ = 0.1 were found:

Selenoenoyl-2-acetone: $\lg K_{distr} = 2.922 \pm 0.006$ (System $CHCl_3-H_2O$)
$\lg K_{distr} = 3.004 \pm 0.010$ (System $C_6H_6-H_2O$)

Benzoyl acetone: $\lg K_{distr} = 3.439 \pm 0.009$ (System $CHCl_3-H_2O$)
$\lg K_{distr} = 3.145 \pm 0.010$ (System $C_6H_6-H_2O$)

The distribution constants of both compounds are independent of their concentration in the organic phase (benzene, chloroform resp.). This is indicative of the fact that neither of the two compounds is associated in the aqueous nor in the organic phase. There are 5 figures, 6 tables, and 14 references, 3 of which are Soviet.

AUTHOR STATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: April 24, 1958

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5(2), 5(3) SOV/75-14-4-4/30

AUTHORS: Peshkova, V. M., Zozulya, A. P.

TITLE: Investigation of Complex Formation in Solutions by the Distribution Method. The System Selenenoyl-2-acetone - Th(IV) - $CHCl_3$ - H_2O

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 4, pp 411 - 416 (USSR)

ABSTRACT: All experiments on the distribution of thorium between an organic phase (chloroform) and an aqueous phase took place at an initial concentration of thorium in the aqueous phase equal to $1.0.10^{-6}$ g-ion/l and an ionic strength of 0.1. The temperature was 25 $\pm$ 0.1°. For the determination of the composition of the complexes which form in the aqueous phase between selenenoyl-2-acetone and thorium, the distribution curves of thorium selenenoyl-2-acetonate were plotted at three different reagent concentrations in the chloroform layer. The measuring results are shown in table 1. In figures 1 and 2 the distribution of Th^{4+} in the system $CHCl_3$ - H_2O is graphically shown in dependence on the pH-value and in dependence of the log $[HA]/[H^+]$ at various concentrations of selenenoyl-2-acetone (HA - molecule of the

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organic reagent). The results agree very well with the theoretical expectations for complexes of the type $M A_n^{(N-n)+}$ (M - metal, A - addendum, N - charge of the metal ion). In order to determine whether complexes are also formed which contain molecules of the organic solvent, the dependence of the distribution coefficient of thorium-selenenoyl-2-acetonate on the pH-value in the systems $CHCl_3$ - H_2O and C_6H_6 - H_2O, at constant reagent concentration in the aqueous phase. The results are shown in table 2 and figure 3. The course of the curves obtained indicates that the complex does not contain molecules of the organic solvent. Under the above conditions, only complexes of the form $Th A_n^{(4-n)+}$ are therefore formed. The authors also investigated the dependence of the distribution coefficient q on the concentration of selenenoyl-2-acetone in the aqueous phase. The results are shown in table 3. Table 4 shows a compilation of

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Investigation of Complex Formation in Solutions by the Distribution Method. The System Selenenoyl-2-acetone - Th(IV) - $CHCl_3$ - H_2O SOV/75-14-4-4/30

the main characteristic features of the complex-forming processes in the system selenenoyl-2-acetone - Th(IV) - $CHCl_3$ - H_2O at 25 ± 0.1°, and of the ionic strength μ = 0.1. The results obtained were used for a determination of the percentage distribution of thorium between complexes of various composition as a function of pA (pA - negative logarithm of the concentration of free reagent). The corresponding curves are shown in figure 6. Thorium-selenenoyl-2-acetonates differ considerably, on the basis of their physico-chemical characteristics, from the complex compounds of thorium with other reagents which contain the same reactive grouping. The former possess considerably higher stability constants and distribution coefficients than, for example, the corresponding acetylacetone complexes of thorium. Selenenoyl-2-acetone is, therefore far better suited as a reagent for the extraction of thorium from aqueous solutions than acetylacetone, which is frequently used for this process. There are 6 figures, 4 tables, and 15 references, 5 of which are Soviet.

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Investigation of Complex Formation in Solutions by the Distribution Method. The System Selenenoyl-2-acetone - Th(IV) - $CHCl_3$ - H_2O SOV/75-14-4-4/30

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: September 10, 1958

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5(2)

AUTHORS: Zozulya, A. P., Peshkova, V. M.

S/074/60/029/02/005/007
B008/B001

TITLE: Investigation of Complex Formation in Solutions by the Distribution Method

PERIODICAL: Uspekhi khimii, 1960, Vol 29, Nr 2, pp 234-268 (USSR)

ABSTRACT: The possibility of using the distribution method for the investigation of complex compounds in solutions is considered in this paper. The foundations for the distribution method (or extraction) were laid down by Nernst in 1891. But it was not until 1941 that the first experiments were made to find a quantitative relation between the distribution ratio of the metal in the system and the parameters of the latter. As may be seen from existing publications, informations on the composition and physicochemical characteristics of complex compounds in every system can be obtained by the treatment of experimental data with corresponding mathematical methods. Theoretical principles of the distribution method and the corresponding equations are quoted in this paper. On investigating systems with chelate compounds, the investigation of the complex-forming

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process, proceeds in stages, and no stage must be omitted. The investigation consists of the following stages: 1) Determination of the dissociation constants of the organic reagent HA with selected constant ionic strength and solution temperature; 2) Investigation of the distribution of the reagent between the aqueous phase and at least two organic solvents in a sufficiently wide range of HA concentrations in the solvent layer 3) Determination of the concentration range of metallic ions in the aqueous phase in which the formation of multinuclear complexes and hydrolysis products may be neglected; 4) Solution of the problem as to whether complexes can be formed which contain molecules of the used organic solvents; 5) Determination of the composition of complexes which are formed in the aqueous phase; 6) Drawing of the distribution curve with rational selection of the factors determined and their mathematical treatment by one or more computation methods (Refs 48-52, 260) etc. In some cases, one experimental result can be treated by mathematical as well as graphical methods. With regard to the latter, it is referred to references 260-264. On considering various special cases (complex formation

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Investigation of Complex Formation in Solutions by the Distribution Method

S/074/60/029/02/005/007
B008/B001

with organic and inorganic addenda, use of polar and non-polar solvents, etc), sometimes a corresponding modification of the respective equations may be necessary, the peculiarities of the system to be investigated being taken into consideration. Mathematical methods, which are used in the investigation of complex formation by the method of metal distribution between two immiscible solvents, may be considered well developed at present. All complex types, which can be formed in aqueous solutions, were theoretically investigated. Many of these complexes were investigated experimentally, at least in solutions with low and constant ionic strength. It may be concluded from the theoretical principles and the consideration of the great number of systems investigated by the distribution method that this method is one of the most reliable, fastest, and relatively simplest methods for the investigation of complex formation in solutions. A. K. Babko, A. T. Pilipenko, I. P. Alimarin, V. N. Polyanskiy, F. G. Zharovskiy, V. V. Fomin, Ye.P.Mayorova, N. S. Povitskiy, A. S. Solovkin, I. M. Korenman, F.R.Sheyanova,

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Investigation of Complex Formation in Solutions by the Distribution Method

S/074/60/029/02/005/007
B008/B001

K. V. Chmutov are mentioned. Figure 1 shows curves log q = f(pH), figure 2 distribution curves of metal between the phases. Table 1 shows constants of stability and distribution of acetyl acetonates of some actinides, table 2 the composition of chelate compounds of some actinides which were determined by the distribution method. There are 2 figures, 2 tables, and 264 references, 47 of which are Soviet.

ASSOCIATION: Leningradskiy gos. un-t im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

Card 4/4

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, A.P.; NOVIKOVA, E.V.

Coulometric determination of small amounts of furan in tetrahydrofuran. Zhur. anal. khim. 18 no.11:1380-1383 N '63. (MIRA 17:1)

1. Gosudarstvennyy institut prikladnoy khimii, Leningrad.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, A.P.; NOVIKOVA, E.V.

Coulometric determination of small amounts of methyl vinyl ketone.
Zav.lab. 29 no.5:543-545 '63. (MIRA 16:5)

1. Gosudarstvennyy institut prikladnoy khimii, Leningrad.
(Ketone) (Coulometry)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

DOBYCHIN, S.L.; ZOZULYA, A.P.

Coulometric titration of p-quinone dioxime with electrogenerated trivalent titanium. Zhur.anal.khim. 17 no.2:148-154 Mr-Ap '62. (MIRA 15:4)

1. State Institute of Applied Chemistry, Leningrad.
(Benzoquinone) (Coulometry)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

PESHKOVA, V.M.; ZOZULYA, A.P.

Physicochemical characteristics of dimethyldioxime and benzoylmethyldioxime and of their compounds with nickel. Trudy kom. anal. khim. 11:69-81 '61. (MIRA 13:10)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Oximes) (Nickel compounds)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, A.P.; PESHKOVA, V.M.

Complex formation insolutions, as studied with the aid of separation. Usp.khim. 29 no.2:234-268 F '60. (MIRA 13:6)

1. Leningradskiy gosudarstvennyy universitet imeni A.A. Zhdanova.
(Complex compounds) (Extraction(Chemistry))

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

USSR/Cultivated Plants - Grains. M.

Abs Jour : Ref Zhur - Biol., No 10, 1958, 44065

Author : Zozulya, B.
Inst : -
Title : Agrotechnics of Corn Cultivation in the Forest-Steppes of the Tyumenskaya Oblast'.

Orig Pub : S. Kh. Sibiri, 1957, No 10, 26-30.

Abstract : No abstract.

Card 1/1

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, Aleksandr Polikarpovich; TOMARCHENKO, S.L., red.

[Coulometric analysis] Kulonometricheskii analiz. Moskva, Khimiia, 1965. 102 p. (MIRA 18:7)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, B.I.; MOROZOV, V.N.; SEMENOV, Yu.N.; Prinimal uchastiye ANTOSHIN, V.G.

Ceramic metal filters for the automatic analysis of pulp in the production of alumina. Porosh. met. 3 no.4:101-105 Jl-Ag '63.

1. Zaporozhskoye otdeleniye Instituta metallokeramiki i spetsial'nykh splavov AN UkrSSR i Zaporozhskiy filial instituta avtomatiki.
(Filters and filtration) (Hydrometallurgy)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, F., admiral

Let us show special concern for the training of young naval officers. Komm.Vooruzh.Sil 3 no.24:17-24 D '62.

(MIRA 15:12)

1. Nachal'nik Glavnogo morskogo shtaba.
(Russia—Navy—Officers)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

LEVCHENKO, G.I., admiral, otvetstvennyy red.; DEMIN, L.A., dots., kand. geogr. nauk, inzh.-kontr-admiral, glavnyy red.; FRUMKIN, N.S., polkovnik, zamestitel' otvetstvennogo red.; ABAN'KIN, P.S., admiral, red.; ALAFUZOV, V.A., prof., kand. voenno-morskikh nauk, admiral, red.; ANAN'ICH, V.Ye., kontr admiral zapasa, red.; ACHKASOV, V.I., kand. istor. nauk, kapitan 1 ranga, red.; BARANOV, A.N., red.; BELLI, V.A., prof., kontr-admiral v otstavke, red.; BESKROVNYY, L.G., prof., doktor istor. nauk, polkovnik zapasa, red.; BOLTIN, Ye.A., kand. voen. nauk, general-mayor, red.; VERSHININ, D.A., kapitan 1 ranga, red.; VITVER, I.A., prof., doktor geogr. nauk, red.; GEL'FOND, G.M., dots., kand. voenno-morskikh nauk, kapitan 1 ranga, red., GLINKOV, Ye.G., inzh.-kontr-admiral v otstavke, red.; YELISEYEV, I.D., vitse-admiral, red.; ZOZULYA, F.V., admiral, red.; ISAKOV, I.S., prof., Admiral Flota Sovetskogo Soyuza, red.; KAVRAYSKIY, V.V. [deceased], prof., doktor fiz.-mat. nauk, inzh.-kontr-admiral v otstavke, red.; KALESNIK, S.V., red.; KOZLOV, I.A., dots. kand. voenno-morskikh nauk, kapitan 1 ranga, red.; KOMAROV, A.V., vitse-admiral, red.; KUDRYAVTSEV, M.K., general leytenant tekhnicheskikh voysk, red.; LYUSHKOVSKIY, M.V., dots., kand. istor. nauk, polkovnik, red.; MAKSIMOV, S.N., dots., kand. voenno-morskikh nauk, kapitan 1 ranga, red.; OKUN', S.B., prof., doktor istor. nauk, red.; ORLOV, B.P., prof., doktor geogr. nauk, red.; PAVLOVICH, N.B., prof., kontr-admiral v otstavke, red.; PANTELEYEV, Yu.A., admiral, red.; PITERSKIY, N.A., kand. voenno-morskikh nauk, kontr-admiral, red.; PLATONOV, S.P., general-leytenant, red.; POZNYAK, V.G., dots., general leytenant, red.; SALISHCHEV, K.A., prof., doktor tekhn. nauk,

(Continued on next card)

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LEVCHENKO, G.I.---(continued) Card 2.
red.; SIDOROV, A.L., prof., doktor istor. nauk., red.; SKORODUMOV, L.A., kontr-admiral, red.; SNEZHINSKIY, V.A., prof., doktor voenno-morskikh nauk, inzh.-kapitan 1 ranga, red.; SOLOV'YEV, I.N., dots., kand. voenno-morskikh nauk, kapitan 1 ranga, red.; STALBO, K.A., kontr-admiral, red.; STEPANOV, G.A. [deceased], dots., vitse-admiral, red.; TOMASHEVICH, A.V., prof., doktor voenno-morskikh nauk, kontr-admiral v otstavke, red.; TRIBUTS, V.F., kand. voenno-morskikh nauk, admiral, red.; CHERNYSHOV, F.I., kontr-admiral, red.; SHVEDE, Ye.Ye., prof. doktor voenno-morskikh nauk, kontr-admiral, red.; CHURBAKOV, A.I., tekhn. red.; VASIL'YEVA, Z.P., tekhn. red.; VIZIROVA, G.N., tekhn. red.; GOROKHOV, V.I., tekhn. red.; GRIN'KO, A.M., tekhn. red.; KUBLIKOVA, M.M., tekhn. red., MALINKO, V.I., tekhn. red.; SVIDERSKAYA, G.V., tekhn. red.; CHERNOGOROVA, L.P., tekhn. red.; GUREVICH, I.V., tekhn. red.; BUKHANOVA, N.I., tekhn. red.; NIKOLAYEVA, I.N., tekhn. red.; RADOVIL'SKAYA, E.O., tekhn. red.; TIKHOMIROVA, A.S., tekhn. red.; BELOCHKIN, P.D., tekhn. red.; LOYKO, V.I., tekhn. red.; ROMANYUK, I.G., tekhn. red.; YAROSHEVICH, K.Ye., tekhn. red.

[Sea atlas] Morskoi atlas. Otv. red. G.I. Levchenko. Glav. red. L.A. Demin. [Moskva] Izd. Glav. shtaba Voenno-morskogo flota. Vol.3. [Military and historical. Pt.1. Pages 1-45] Voenno-istoricheskii. Zamestitel' otv. red. po III tomu N.S. Frumkin. Pt.1. Listy 1-45. 1958. _____ [Military and historical maps, pages 46-52]

(Continued on next card)

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LEVCHENKO, G.I.---(continued) Card 3.
Voenno-istoricheskie karty, listy 46-52. 1957. (MIRA 11:10)

1. Russia (1923- U.S.S.R.) Ministerstvo oborony. 2. Nachal'nik Glavnogo upravleniya geodezii i kartografii Ministerstva vnutrennikh del SSSR (for Baranov). 3. Chlen-korrespondent Akademii nauk SSSR (for Kalesnik). 4. Deystvitel'nyy chlen Akademii pedagogicheskikh nauk RSFSR (for Orlov).

(Ocean--Maps)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, F.V.

ISAKOV, I.S., prof., admiral flota v otstavke, otv.red.; SHULEYKIN, V.V., akademik, inzh.-kapitan 1 ranga, zamestitel' otv.red. po II tomu; DEMIN, L.A., dotsent, kand.geograf.nauk, inzh.-kapitan 1 ranga, glavnyy red.; ABAN'KIN, P.S., admiral, red.; VIZE, V.Yu., red.; GERASIMOV, I.P., red.; GLINKOV, Ye.G., inzh.-kontr-admiral, red.; DROZDOV, O.A., prof., doktor geograf.nauk, red.; ZOZULYA, F.V., vitse-admiral, red.; PAVLOVSKIY, Ye.N., akademik, general-leytenant meditsinskoy sluzhby, red.; POGOSYAN, Kh.P., prof., doktor geograf.nauk, red.; RUDOVITS, L.F., doktor geograf.nauk, red.; SKORODUMOV, L.A., kontr-admiral, red.; SHIRSHOV, P.P., akademik, red. [deceased]; BASHILOV, G.Ya., inzh.-kapitan 2 ranga, uchenyy sekretar'; SEREGIN, M.P., kapitan 1 ranga, red.kart; RYABCHIKOV, S.T., podpolkovnik, red.kart; YEGOR'YEVA, A.V., kand.geograf.nauk, red.kart; AVER'YANOVA, P.S., kand.geograf.nauk, red.kart; BUGORKOVA, O.S., red.kart; GAPONOVA, A.A., red.kart; DMITRIYEVA, T.V., red.kart; DOTSENKO, Ye.I., red.kart; KONYUKOVA, L.G., red.kart; KOMOLOVA, Ye.N., red.kart; LUKANOVA, L.S., red.kart; SMIRNOVA, V.G., kand.geograf.nauk, red.kart; CHECHULINA, Ye.P., red.kart; SHKOL'NIKOV, A.M., red.kart; GRIN'KO, A.M., tekhn.red.; IVANOVA, M.A., tekhn.red.; MOROZOVA, A.F., tekhn.red.

[Marine atlas] Morskoi atlas. Otv.red.I.S.Isakov. Glav.red. L.A. Demin. Izd. Morskogo general'nogo shtaba. Vol.2 [Physical geography] Fiziko-geograficheskii. Zamestitel' otv.red. po II tomu V.V. Shuleikin. 1953. 76 maps. (MIRA 12:1)

1. Russia (1923- U.S.S.R.) Voyenno-morskoye ministerstvo. 2. Chlen-korrespondent Akademii nauk SSSR (for Vize, Gerasimov).
(Ocean--Maps) (Harbors--Maps)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, F.V., admiral

Faithful guard of the sea boundaries. Voen.zhur. 37 no.7:1-2 Jl '61. (MIRA 14:6)

(Russia—Navy)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, F.V., admiral

Prepare youth for naval service. Voen. znan. 38 no.4:13 Ap '62. (MIRA 15:4)

(Russia--Navy)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

KOSITSIN, V.I.; ZOZULYA, F.Z., inzhener.

Economizing metal in forging. Vest.mash. 33 no.3:33-35 Mr '53. (MLRA 6:5)
(Forging)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, I. A.

Zozulya, I. A. - "The results of cross-breeding of local and Simmental cattle in the Ukraine", Trudy (Ukr. nauch.-issled. in-t zhivotnovodstva), Issue 19, 1948, p. 9-27, - Bibliog: 21 items.

SO: U-3261, 10 April 53, (Letopis 'Zhurnal 'nykh Statey, No. 11, 1949).

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

YEL'YASHEVICH, M.G.; ZOZULYA, I.I.; SHTEYNBERG, I.Ye.; SERGEYEV, A.P.; LOKSHIN, M.A.; SHCHEPIN, N.N.

Increasing the efficiency of slurry flotation. Koks i khim. no.9: 18-19 '63. (MIRA 16:9)

1. Donetskiy politekhnicheskiy institut (for Yel'yashevich, Zozulya, Shteynberg). 2. Makeyevskiy koksokhimicheskiy zavod (for Sergeyev, Lokshin, Shchepin).

(Coal Preparation)

APPROVED FOR RELEASE: .Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

B. T. R.
V. 3 No. 3
Mar. 1964
Metals- Extraction and Refining

3683* Intensification of Flotation Processing of Sulfide Minerals. (Russian.) T. I. Zorina. Izvestiia Akademii Nauk SSSR, Otdelenie Tekhnicheskikh Nauk, 1958, no. 7, July, p. 964-968.

Wettability of surface can be effectively changed by means of gases formed in electrolytic dissociation of water directly in the pulp. Graphs, diagrams.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

YEL'YASHEVICH, M.G.; ZOZULYA, I.I.; ODINTSOV, N.V.; NAUMOV, N.G.

Introduction of an efficient flotation system at the coal-cleaning section of the Scherbinovka Coking Plant. Koks i khim. no.9:6-10 '60. (MIRA 13:9)

1. Donetskiy politekhnicheskiy institut (for Yel'yashevich, Zozula).
2. Shcherbinovskiy koksokhimicheskiy zavod (for Odintsov, Naumov).
(Shcherbinovka--Coal preparation) (Flotation)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

KOVALENKO, V.I., kandidat khimicheskikh nauk; ZOZULYA, I.I., kandidat tekhnicheskikh nauk; ZHEDEK, M.S., kandidat khimicheskikh nauk.

Enrichment of local quartz sands. Stroi.prom. 32 no.3:42-45 Mr '54. (MLRA 7:5)

(Building materials) (Sand)

ZOZULYA, I. I.
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Metallurgy and Metallography

Intensification of the flotation process of sulfide minerals. I. I. Zozulya. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1953, 664-8.—It was shown experimentally that it is possible to alter significantly the wetting properties of mineral surfaces of sulfide mineral pulp by introduction of gases formed directly in the mass by electrolytic decompn. of the aq. suspension. Brief contact with such gases greatly intensifies the flotation process and reduces the time consumption by 50%. The expts. were made with chalcopyrites, ZnS, pyrites, Cu pyrites, and synthetic quartz-chalcopyrites mixt. The effect is produced by the electrolytically produced O at the anode. G. M. Kosolapoff.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

YEL'YASHEVICH, M.G., kand.tekhn.nauk; ZOZULYA, I.I., kand.tekhn.nauk; NAUMOV, N.G., insh.

Coal flotation at the coal preparation section of the Shcherbinovka Coke and Chemical Plant. Ugol' Ukr. 5 no.3:9-11 Mr '61. (MIRA 14:3)
(Donets Basin--Coal preparation)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, I.I.; PLAKSIN, I.N., chlen-korrespondent.

Intensification of the flotation process of sulfide minerals. Izv.AN SSSR Otd.tekh.nauk no.7:964-968 Jl '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Plaksin). (Flotation) (Sulfides)

25(1) PHASE I BOOK EXPLOITATION SOV/1788

Ogneupory dlya chernoy metallurgii; sbornik statey (Refractories in Ferrous Metallurgy; Collection of Articles) Moscow, Metallurgizdat, 1958. Errata slip inserted. 4,000 copies printed.

Ed.: D. I. Gavrish, Engineer; Ed. of Publishing House: I. P. Kirsanov; Tech. Ed.: A. I. Khanaev.

PURPOSE: This book is intended for engineers and technicians working in ferrous metallurgy.

COVERAGE: The book consists of 20 articles on the development and use of refractories in the Soviet metallurgical industry. D. I. Gavrish, in the first paper, presents the prospects for development and research projects for the period 1959-1965. He emphasizes development of refractory plants in the eastern part of the USSR. In general the articles deal with recent developments in basic and acidic refractories for blast and open hearth furnaces, and for the lining of ladles and special equipment used in continuous casting and in vacuum treatment of steel. A. S. Berezhnoy discusses the technology of manufacturing magnesite and forsterite refractories which frequently replace Dinas brick and fire clay. Several authors state that good results were obtained with

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particles-crystall brick and with bricks made of magnesium and chromite compounds. The application of new refractories, insulating materials, high-temperature mortars, binding media, and cements, combined with advanced techniques in lining furnaces, are said to have more than doubled the time intervals between relining and overhauling furnaces. O. M. Margulis and A. G. Khrenkov discuss the use of "tagged atoms" to determine the degree of contamination of steel by refractory-lining particles. N. S. Lozyuk describes the production of refractories by the sondiry pressing method employed at the Nizhnedneprovsk plant, and I. S. Khyzarski and V. D. Teigler cover the use of lightweight Dinas bricks in industrial furnaces. The last paper written by A. E. Nikanorov compares and evaluates the physical properties and service life of fireclay bricks, forsterite bricks, Dinas bricks and bricks with high alumina content. Graphs, diagrams, and photographs accompany the papers. For references, see Table of Contents.

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Refractories in Ferrous Metallurgy (Cont.) SOV/1788

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ZHIKHAREVICH, S.A.; ZELENSKAYA, A.T.; SAFRONOVA, I.P.; ZOZULYA, I.S.; VITRENKO, P.M.; CHERNYAVSKAYA, Z.Ya.; ABRAMOVICH, A.M.

Production and service of graphite containing inserts. Ogneupory 29 no.12:536-540 '64. (MIRA 18:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Zhikharevich, Zelenskaya, Safronova). 2. Konstantinovskiy ogneuporny zavod "Krasnyy Oktyabr'" (for Zozulya, Vitrenko, Chernyavskaya, Abramovich).

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

MERKVUK, I.M.; SHEREMETEV, V.F.; ZOZULIA, I.N.

Centrifugal mill for clay minerals. Geology 32 no.4:18-21 '66. (MIRA 19:4)

1. Orgnekhimstroymaterialy (for Mikheyev). 2. Kostromskoy [illegible] "Energoremont" (for Sheremetev, Zozulia).

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

381. ZOZULIA L. *Pseudo-albuminuric retinitis in intracranial hypertension (Russian text) VESTN. OFTAL. 1956, 69/5 (34-37) Tables 1

The examination of 653 patients with hypertension syndrome showed in 12 patients pseudo-albuminuric retinitis and papilloedema. The cause of increased intracranial pressure was in 5 intracranial tumours, in 6 infectious diseases of the nervous system, arachoiditis, meningo-encephalitis, and in one a tuberculoma. The age of the patients was from 9 to 43 yr. In all of them the kidney function was normal. In the majority of the patients there were retinal haemorrhages and a star-shaped figure in the macular region. These changes in the retina took place in a slowly developing pathological process in the brain (from 10 months to 2 yr.). The cause of the appearance of this type of retinitis is not clear and is probably caused by the pathological changes in the end capillaries of the retina due to increased intracranial pressure.

Sitchevska - New York, N.Y.

USSR / Human and Animal Physiology (Normal and Pathological). T
Nervous System.

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 60791

Author : Sergiyenko, T. M.; Zozulya, L. N.; Prikhodchenko, I. A.
Inst : Not given
Title : The Blood Vessel State and Reactivity in the Dynamics of Intracranial Hepertension Reflected in the Fluid Pressure and Ophthalmoscopy

Orig Pub : V sb.: Probl. neyrokhirurgii. T. Z. Kiev, Gosmedizdat USSR, 1957, 253-264

Abstract : No abstract given

Card 1/1

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, L.N.

Ophthalmodynamometric and ophthalmoscopic indexes in brain tumors of varying histostructure. Probl.neirokhir. 4:99-106 '59. (MIRA 13:11)
(BRAIN--TUMORS)
(INTRAOCULAR PRESSURE)
(RETINA--BLOOD SUPPLY)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M. (g.Khabarovsk)

A lad from Sovetskaya Gavan'. Radio no.5:15-16 My '62. (MIRA 15:5)

(Radio clubs) (Radio operators)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

107-58-6-5/58

AUTHORS: Zozulya, M., Manager of the Crimean DOSAAF Radio Club; Reydler, Ya., Judge of First Category

TITLE: Their Experience Must Be Used (Ikh opyt nado ispol'zovat') How We Conduct Competitions (Kak my provodim ochnyye konkursy)

PERIODICAL: Radio, 1958, Nr 6, pp 6-7 (USSR)

ABSTRACT: The authors explain briefly how competitions of radio amateurs are organized by the Crimean DOSAAF Radio Club. These competitions are said to have increased the number of amateur radio operators. Previously not more than 50 - 60 amateurs participated in the competitions while their number is presently around 1,000.

Card 1/1 1. Radio-Amateur personnel

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.

Radio amateurs of Lytkarino. Radio no.3:7 Mr '61. (MIRA 14:8)
(Lytkarino--Radio clubs)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M. (g.Shatura)

Worthy replacements. Radio no.4:14-15 Ap '61. (MIRA 14:7)
(Radio clubs)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.

[Kazakhstan, a republic with developed irrigation farming] Kazakhstan - respublika razvitogo polivnogo zemledeliia. [Alma-Ata, Kazakhskoe gos. izd-vo, 1955] (MLRA 10:2)

(Kazakhstan—Irrigation farming)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.; REYDLER, Ya.

The club council and its active members. Radio no.8:11-12 Ag '56. (MLRA 9:10)

1.Nachal'nik Krymskogo radioklubа Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i fletu SSSR (for Zozulya). 2.Instruktor Krymskogo radioklubа Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i fletu (for Reydler), Simferopol'.
(Radio clubs)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

TITLE: The Collectives of Radio Clubs Are in Competition. (Kollektivy radioklubov sorevnuyutsya)

107-8-19/62

high-speed wireless operators.

More than one third of the club members are girls who have completed radio operator courses. Some of them are specialized in high-speed telegraph communication.

Permanent teams of wireless operator are affiliated with the radio sections of the Kerch' and Sevastopol Navy Clubs and with the Feodosiya and Simferopol' "DOSAAF"-organizations.

The number of radio amateur-designers must be increased, especially in the application of radio engineering to the national economy.

The Crimean "DOSAAF" Radio Club promised every assistance to amateur radio clubs.

INSTITUTION: None
PRESENTED BY:
SUBMITTED:
AVAILABLE: At the Library of Congress

Card 2/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.; REYDLER, Ya., sud'ya pervoy kategorii

Their experience must be utilized. Radio no. 6:6-7 Je '58.
(MIRA 11:7)

1. Nachal'nik Krymskogo radiokluba Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu(for Zozulya).
(Radio--Competitions)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.

Radio amateurs of the first atomic plant. Radio no.3:11-12 Mr '60. (MIRa 13:6)

(Radio)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M. (g.Elektrogorsk)

Birth of a club. Radio no.4:20 Ap '60. (MIRA 13:8)
(Elektrogorsk--Radio clubs)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.; GALINA, V.

Metal workers who are interested in radio. Radio no.8:11-12 Ag '60. (MIRA 13:9)
(Radio clubs) (Radio operators)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.

Our achievements. Radio no.11:15 N '62. (MIRA 15:12)

1. Nachal'nik Krymskogo oblastnogo radiokulba Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu.
(Crimea—Radio operators)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M. (Severomorsk)

Medical doctor, a designer, and sportsman. Radio no.1:6 Ja '63. (MIRA 16:1)

(Radio operators)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.

Amateurs become professionals. Radio no.2:8-9 F '64. (MIRA 17:3)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M. (Cherniyev, Ivano-Frankovskoy oblasti)

Present-day problems and aspirations of the radio amateurs of Chernieve. Radio no.12:6-7 D '64. (MIRA 18:3)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.

The astronaut remains a radio amateur, Radio no.[illegible] (MIRA 18:[illegible])

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.

Conversation on the eve of the final. Radio no.7:12-13 Jl '65.
(MIRA 18:9)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.

A meeting in Borovichi. Radio no.1:12 Ja '66.
(MIRA 19:1)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.

The main thing is the concern for the young. Radio no.3:8-9 Mr '65. (MIRA 18:6)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

S/526/62/000/024/003/013
D234/D308

AUTHORS: Zozulya, M.V., Khavin, O.O. and Kozub, Yu.I.

TITLE: Composition diagrams of heat exchangers consisting of longitudinally ribbed pipes

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut teploenerhetyky. Zbirnyk prats', no. 24, 1962. Teploobmin ta hidrodynamika, 24-32

TEXT: The authors give several diagrams of heat exchangers, classified into types with one or two pipe racks and with collector outlet of the heat carrier. Versions with one rack require U-shaped bends in a non-ribbed section of the pipes. Results of design of 3 different versions are tabulated and compared with the parameters of an ordinary smooth pipe heat exchanger, showing that the former are more advantageous. There are 7 figures and 1 table.

Card 1/1

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA,

BOCHIN, L.A., inzhener; ZOZULYA, M.L., inzhener.

Some problems on standardization of electric lighting installations. Svetotekhnika 3 no.6:26-29 Je '57. (MIRA 10:7)

1. Vsesoyuznyy svetotekhnicheskiy institut.
(Electric lighting)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.Ya., kand. (Almaty)

Role of the basin snow-water irrigation in the solution of feed problems in Kazakhstan. Gidr. i mel. 16 no.3:17-21 Mr '64. (MIRA 17:6)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.Sh., inzh. (g.Alma-Ata)

Water supply and irrigated oases in the pastures of Kazakhstan. Gidr. i mel. 13 no.5:32-37 My '61. (MIRA 14:5)
(Kazakhstan--Water supply, Rural)
(Pastures and meadows)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, M.Sh., zasluzhennyy gidrotekhnik Kazakhskoy SSR; TATARINTSEV, K.K.

Water resources of the Volga-Ural region at the service of animal husbandry in Kazakhstan. Zhivotnovodstvo 23 no.8:30-33 Ag '61. (MIRA 16:2)

1. Nachal'nik otdela proyektno-izyskatel'skikh rabor Ministerstva sel'skogo khozyaystva Kazakhskoy SSR (for Zozulya). 2 .Nachal'nik otdela orosheniy Leningradskogo gosudarstvennogo instituta po proyektirovaniyu vodokhozyaystvennogo i i meliorativnogo stroitel'stva.

(West Kazakhstan Province--Water Supply, Rural)
(Gur'yev Province--Water supply, Rural)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, N.S.; KURDYUKOV, V.A.

Mineral springs of Mount Dzhungaly in central Kazakhstan. Vest. AN Kazakh. SSR 21 no.5:43-45 My '65. (MIRA 18:7)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, N.S., insh.

Modernization of the blocking magnet of a diesel regulator. Elek. i tepl. tiaga 4 no. 9:13 S '60. (MIRA 13:12)

1. Depo Rtishchevo II Privolzhskoy dorogi.
(Diesel locomotives)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

Subject : USSR/Engineering AID P - 2771

Card 1/1 Pub. 110-a - 13/14

Authors : Zozul'ya, N. V. and Dyban, E. P.

Title : Scientific and Technical Conference on heat transfer in homogenous media

Periodical : Teploenerg., 9, 61-63, S 1955

Abstract : The article reports on the conference organized by the Commission of Superhigh Steam, Power Institute, Academy of Sciences, USSR, and the Heat and Power Institute of the Ukrainian Academy of Sciences, held in Kiyev, this June 4th. The author lists the names of participants and gives a very brief account of their reports.

Institution : None

Submitted : No date

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULIA, N. V.

Zozulua, N. V. "Investigation of heat liberation in the condensation of steam in vertical tubes." Acad Sci Ukrainian SSR. Inst of Heat Power Engineering. Kiev, 1956. (Dissertations for the Degree of Candidate in Technical Science)

So: Knizhnaya letopis', No. 27, 1956. Moscow. Pages 94-109;111.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, N.V.

Measuring the thickness of film in the condensation of water vapor. Trudy Inst.tepl.AN URSR no.13:85-89 '56. (MLRA 10:5)
(Steam) (Boilers)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

AUTHOR: Zo^zulya, N.V. (Cand.Tech.Sci) &Balitskiy S.A. (Engineer) 96-3-23/26

TITLE: Session on heat exchange during change of aggregate state of matter. (Sessiya po teploobmenu pri izmenenii agregatnogo sostoyaniya veshchestva.)

PERIODICAL: Teploenergetika, 1958, No.3. pp. 91-93 (USSR)

ABSTRACT: The Commission on High Steam Conditions of the Power Institute of the Acad.Sci. of thw U.S.S.R. and the Institute of Thermal Engineering of the Acad.Sci. of the Ukrainian SSR, held a scientific and technical session in Kiev on September23-29, 1957 on questions of heat exchange during change of aggregate state of matter. The session was attended by scientific workers of academic and research institutes and colleges, and workers in design institutes and industry. Forty reports were read in the plenary and sectional sessions. The main tasks of the session were to consider the research work that had been carried out, to co-ordinate research work and to determine the most promising lines for investigation into heat exchange during change of aggregate state of matter. In his report 'Some problems of the theory of heat exchange during large volume boiling in tubes' corresponding member of the Acad.Sci. Ukrainian SSR, V.I. Tolubinskiy, critically examined the best known criterial equations for boiling liquid. Dr.Tech.Sci. S.S. Kutateladze, of the Central Boiler Turbine Institute made a report about 'Some problems of the theory of crises in the mechanism of boiling' which

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

systematised the results of investigations on critical densities of heat flow during boiling in large volume tubes. Dr.Phys.Math.Sci. A.A. Gukhman of the Moscow Division of the Central Boiler Turbine Institute made a report 'On the mechanism of influence of mass-exchange on heat-exchange during boiling', which analysed the influence of the developing gas phase on heat exchange during evaporation. Dr.Tech.Sci. L.D. Berman of the All-Union Thermo-Technical Institute delivered a report on the interrelationship between thermal and mass exchange during evaporation of a liquid and condensation of the steam in the presence of permanent gases. Corresponding Member of the Acad.Sci. of the U.S.S.R., G.N. Kruzhilin, discussed Tolubinskiy's report. Dr.Tech.Sci., V.G. Fastovskiy of the All-Union Electro-Technical Institute, gave information about experimental data obtained during boiling of a number of organic liquids and mixtures of them with water. Dr.Tech.Sci., B.S. Petukhov, Moscow Power Institute, pointed out the need for profound study of the mechanism of boiling of liquids. Cand.Tech.Sci., D.A. Labuntsov, Moscow Power Institute, expressed a similar opinion. The session on heat exchange during boiling in the region of moderate thermal loading heard 7 reports. Dr.Tech.Sci., V.D. Popov, (KTIPP) made a report on 'Heat transfer during boiling of crystallising solutions', Cand.Tech.Sci., V.G. Garyazha (KTIPP) presented the results of an experimental investigation of heat

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

Session on heat exchange during change of aggregate state of matter. 96-3-23/26

transfer during the boiling of massecuite. Dr.Tech.Sci., I.I. Chernobyl'skiy (Institute of Thermal Engineering of the Acad.Sci. Ukrainian SSR, Engineer S.A. Balitskiy (same Institute) and Engineer F.P. Minchenko of the Central Boiler Turbine Institute reported the results of an experimental investigation of heat transfer during boiling of aqueous solutions of lithium bromide and chloride under vacuum. Cand.Tech.Sci. I.E. Veneraki, of the Kiev Polythechnical Institute, reported the results of investigations on heat transfer of a horizontal bundle of tubes to boiling water and sugar solution under conditions of free convection and vacuum. Cand.Tech.Sci. R.Ya. Ladiyev of the Kiev Polythechnical Institute reported on 'The use of approximate thermo-dynamic similarity to establish heat transfer relationships during boiling. Dr.Tech.Sci. I.I. Chernobyl'skiy of the Thermal Engineering Institute of the Acad.Sci. of the Ukrainian SSR and Cand.Tech.Sci. G.V. Patiani of the Power Institute of the Acad.Sci. Georgian SSR reported the results of investigations on the heat transfer co-efficient when boiling Freon 12 in large volume on horizontal tubes. Contributions to the discussion were made by Cand.Tech.Sci. V.Ya. Gol'tsov (M.I.Kh.M), V.D. Popov of KTIPP, Cand.Tech.Sci. V.M. Borishanskiy of the Central Boiler Turbine Institute, Cand.Tech.Sci. N.Yu. Tobilevich (TsINS). The session on heat

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

Session on heat exchange during change of aggregate state of matter. 96-3-23/26

exchange during boiling in the region of high thermal loadings heard 13 reports. Engineer V.G. Chakrygin, and Cand.Tech.Sci. V.A. Lokshin of the All-Union Thermo-Technical Institute, reported on the results of experimental investigation of the influence of non-uniformity of heat exchange round the perimeter of a horizontal steam raising tube. Cand.Tech.Sci. V.M. Borishanskiy (Central Boiler Turbine Institute) reported the results of experiments on heat transfer to boiling water at super-high and near critical pressures. Cand.Tech.Sci. E.I. Aref'eva and Cand.Tech.Sci. I.T. Alad'ev of the Power Institute of the Acad.Sci. of the U.S.S.R. reported on the influence of wetting on heat exchange during boiling. Cand.Tech.Sci. Z.L. Miropol'skiy and Cand.Tech Sci. M.E. Shitsman of the Power Institute of the Acad.Sci. of the U.S.S.R., gave the results of experiments on heat transfer and permissible specific thermal loading in the steam raising tubes of boilers. Cand.Tech.Sci. N.V. Tarasova of the All-Union Thermal Technical Institute, gave the results of investigation on critical thermal loadings and heat transfer from the walls of tubes to water, and steam-water mixture. Cand.Tech.Sci. I.T. Alad'ev, Engineer, L.D. Dodonov and V.S. Udalov of the Power Institute of the Acad.Sci. of the U.S.S.R. gave a report on 'Heat Transfer and Critical Thermal Fluxes during boiling of under heated water in Tubes'. Cand.Tech.Sci. E.K. Averin of the Power Institute

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

Session on heat exchange during change of aggregate state of matter. 98-3-23/26

of the Acad.Sci. of the U.S.S.R., reported on Heat exchange during boiling under conditions of forced circulation of water'. Engineer G.G. Treshchev of the All-Union Thermo-Technical Institute, reported on 'Experimental investigation of the mechanism of the heat exchange during surface boiling'. Dr.Tech.Sci. S.S. Kutateladze and Cand.Tech. Sci. V.N. Moskvicheva of the Central Boiler Turbine Institute, considered the relationship between the hydro-dynamics of a two-phase layer with the theory of crises in the mechanism of boiling. Cand. Tech.Sci. L.S. Sterman, Engineers V.V. Morozov and S.A. Kovalev of the Moscow Division of the Central Boiler Turbine Institute, reported on 'A study of heat exchange during boiling of liquids in tubes at various pressures up to 85 atms'. Cand.Tech.Sci. E.A. Kazakova (GIAP) reported on questions of heat exchange during the critical point under conditions of natural convection. The following took part in the discussion:- Dr.Phys.Math.Sci. A.A. Gukhman, Dr.Tech.Sci. B.S. Petukhov, Corresponding Member of the Acad.Tech.Sci. Ukrainian SSR, V.I. Tolubinskiy, Cand.Tech.Sci. A.P. Ornatskiy, Dr.Tech.Sci. V.G. Fastovskiy and Cand.Tech.Sci. M.I. Korneyev. The section on heat exchange during condensation and evaporation heard 7 reports. Dr.Tech.Sci. L.D. Berman of the All-Union Thermo-Technical Institute reported on 'Heat and Mass exchange during condensation of steam from a moving steam-air mixture on horizontal tubes'. Cand.Tech.Sci. N.V. Zozuli of the Institute of Thermal Engineering

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

of the Acad.Sci. Ukrainian SSR considered the study of the process of heat exchange and the hydro-dynamics of flow of a film of condensate. Cand.Tech.Sci. O.A. Kremnev, of the Institute of Thermal Engineering of the Acad.Sci. Ukrainian SSR gave the results of an experimental investigation of heat and mass exchange in models of air, and water coolers used in deep mines. Cand.Tech.Sci. K.I. Reznikovich reported on a theoretical solution of the problem of calculating the parameters of a cooled steam gas mixture. Engineer A.L. Satanovskiy reported on 'Heat exchange during air-water evaporative cooling of equipment'. Engineer L.I. Gel'man of the Central Boiler Turbine Institute reported about investigations on heat transfer during condensation of mercury vapour on a steel wall. Dotsent V.F. Yanchenko of the Ural Polytechnical Institute, Cand.Tech.Sci. O.A. Kremnev, Dr.Tech.Sci. L.D. Berman and V.A. Smirnov of the Power Institute Acad.Sci. Ukrainian SSR contributed to the discussion. The session noted the need for further development of investigations of combined processes of heat and mass exchange; further development of study of heat exchange during change of aggregate conditions of promising new working substances; a profound study of the relationships and mechanism of the process of heat exchange and the production of data for practical calculations, and recommendations for the design of new power plant. The session directed the

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

Session on heat exchange during change of aggregate state of matter. 96-3-23/26

attention of the Acad.Sci. U.S.S.R. and Gosplan U.S.S.R. to the need for rapid study of the physical properties of new working substances. It was decided to call a session devoted to convective heat exchange in uniform media in Leningrad, in 1959.

AVAILABLE: Library of Congress.

Card 7/7

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, N.V. [Zozulia, M.V.]

Heat transmission during the condensation of vapor as affected by the condensate viscosity [with summary in English]. Dop. AN URSR no.3:272-275 '58. (MIRA 11:5)

1.Institut teploenergetiki AN URSR. Predstavleno akademikom AN USSR I.T. Shvetsom.

(Heat--Transmission) (Condensation)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

SOV/81-59-16-57327

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, p 247 (USSR)

AUTHOR: Zozulya, N.V.

TITLE: The Problem of the Method of Investigation and the Physics of the Process of Heat Emission in the Condensation of Steam

PERIODICAL: Sb. tr. In-t teploenerg. AN UkrSSR, 1958, Nr 14, pp 32-42

ABSTRACT: An installation is described for studying heat emission in the condensation of steam in vertical pipes at atmospheric pressure and under conditions of a technical vacuum. It has been shown by experiments on the condensation of water vapors that at atmospheric pressure a mixed condensation takes place; the intensification of the heat exchange in this case is determined not only by the presence of zones of drop condensation, but also by the perturbations of the laminar flow of the condensate film which enters these zones periodically. Two forms of condensate film flow have been established: in the upper part of the pipe a thin film flows in a laminar flow, but after the film has reached a certain thickness, ring waves appear on it, the height of which increases in proportion to the flowing-off of the condensate. In the flowing-off of a glycerol film the formation of solitary stretched waves has been noted; the transition from the laminar flow

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

SOV/81-59-16-57327

The Problem of the Method of Investigation and the Physics of the Process of Heat Emission in the Condensation of Steam

to the wave flow takes place at $Re_n = 4qH/(r\gamma\nu) = 25 - 35$, where q is the specific heat load, H the height of the pipe, r, γ and ν the latent heat of steam formation, the density and the kinematic viscosity of the liquid. It has been found that the process of heat transfer through the film is intensified in proportion to the development of the wave flow on the cooling surface; the length of the zone of wave flow which is the transition zone between the zones of laminar and turbulent flow lies in the range $30 < Re_n < 2{,}000 - 2{,}500$ and the coefficient of heat emission α in this zone can be determined by the equation $(\alpha/\lambda)(\nu^2/g)1/3 = 1.05\ Re_n^{-2/9}$, where g is the acceleration of gravity, λ the thermal conductivity of the liquid.

A.R.

Card 2/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

ZOZULYA, N.V., kand. tekhn. nauk; BALITSKIY, S.A., inzh.

Session on heat transfer in different states of aggregation of substances. Teploenergetika 5 no.3:91-93 Mr '58. (MIRA 11:4)
(Heat--Transmission)

24(8) PHASE I BOOK EXPLOITATION SOV/1826

Akademiya nauk SSSR. Energeticheskiy institut

Teploperedacha i teplovoye modelirovaniye (Heat Transfer and Modeling of Heat Processes) Moscow, Izd-vo AN SSSR, 1959. 419 p. Errata slip inserted. 3,500 copies printed.

Resp. Ed.: M. A. Mikheyev, Academician; Ed. of Publishing House: D. A. Ivanova; Tech. Ed.: G. N. Shevchenko.

PURPOSE: The book is intended for scientists concerned with heat transfer, heat emission, and hydraulics of liquid metals, etc.

COVERAGE: This collection is dedicated to the memory of Academician M. V. Kirpichev who in the twenties initiated a systematic investigation of heat transfer processes and the efficiency of heat apparatus. Later he led the development of research work in this field. Two special collections devoted to works of Kirpichev's school have been published, one in 1938, Materialy soveshchaniya po modelirovaniya (Materials of the Conference on Modeling) and in 1951, Teoriya podobiya i modelirovaniye (Theory of Similitude and Modeling). The present collection prepared in 1956 represents further development of the work of this school. This theory is fundamental for the analysis of many heat problems in the field of electrical and radio engineering. Of great importance are the first systematic investigations of heat transfer and the hydraulics of liquid metals which as a new kind of heat carrier may be used in the various branches of modern engineering. As a result of special investigations of some cases of convective heat transfer, a dependence of the process on the kind of liquid, temperature, pressure, direction of the heat flow, and other factors, was discovered and established. On the basis of a wide generalization of experimental data, new dependable recommendations for heat analysis of engineering equipment were developed. Of no less interest is the work on heat transmission in boiling liquids and the condensation of vapors. All investigations are based on the theory of similitude, the nature of which, according to M. V. Kirpichev, is that of "experimentation." Work on the theory of a regular regime applied to a system of bodies with an internal source of heat is of interest for the future.

Card 2/20

Zozulya, N. V. Experimental Determination of the Heat Transfer Coefficient in the Condensation of Vapors of Viscous Materials 278

Experiments were made by the author at the Institut teploenergetiki, AN USSR (Institute of Heat Power Engineering, Academy of Sciences, UkrSSR). Condensation of glycerin vapor on vertical pipes was studied. Results were obtained for cases in which the viscosity of the material was 100 times greater than the viscosity of water. There are 3 Soviet references.

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Heat Transfer (Cont.) SOV/1826

Zozulya, N. V. Investigation of Heat Transfer in Vapor Condensation on Vertical Pipes 279

Experimental studies of heat transfer in vapor condensation on vertical pipes were made in the Institute of Heat Power Engineering, Academy of Sciences, UkrSSR. Water and glycerin were used as viscous materials. Results of the investigation are given. Academician P. L. Kapitsa is mentioned in connection with thin layer flows. Experimental data appear in S. S. Kutateladze's coordinates. Academician M. A. Mikheyev's formula is used for the determination of Nussel's number. There are 17 references: 6 Soviet, 6 English, 4 German, and 1 French.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510012-9"

18(5,7) SOV/125-12-6-5/14

AUTHORS: Bernadskiy, V.N., Engineer and Zozulya, N.V., Candidate of Technical Sciences

TITLE: On the Production of Die-Welded Thin-Walled Heating Radiators

PERIODICAL: Avtomatichskaya svarka, 1959, Vol 12, Nr 6 (75) pp 31-35 (USSR)

ABSTRACT: The article presents investigations with test samples of a not sectional panel heating radiator. By the Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton) together with the Institut teploenergetiki AN USSR (Institute of Heat-Power Engineering AS UkrSSR) several variants of a not sectional panel radiator for a water-heating system with a working pressure up to 4 atm. was constructed. The test sample of the radiator consists of two symmetrical pressed parts made of low carbon steel, 1,0 mm thick. They are connected at perimeter by gas-welding. The results of the tests showed, that the heat trans-

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On the Production of Die Welded Thin Walled Heating Radiators

fer coefficient of the panel radiator is about 25-35% higher than the one usually used standard sectional cast iron radiator. Also in building appartment houses, the not sectional panel steel radiator is of importance. The standard cast iron radiator needs 3.6-3.9 Kg metal for 1 m^2 living area. The panel steel radiator with a metal thickness of 1.75-2.0 mm needs not more than 1.9 - 2.2 Kg metal for the same area. It is supposed, that the not sectional panel steel radiator is going to become greatly important in national economy. There are 2 diagrams and 2 graphs.

ASSOCIATION: Ordena trudovogo krasnogo znameni institut elektrosvarki imeni Ye.O.Patona AN USSR (Institute of Electric Welding imeni Ye.O.Paton AN UkrSSR)(Bernadskiy) and Institut teploenergetiki AN USSR(Institute of Thermal-Power Engineering AS UkrSSR)(Zozulya).

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TITLE: Tubular Surfaces with Longitudinal Ribbing for Regenerators and Water Heaters of Gas-turbine Sets

PERIODICAL: Energomashinostroyeniye, 1961, No. 1, pp. 5-8

TEXT: For gas-turbine regenerators, smooth-tubed heat exchangers have two important disadvantages: the entire heat-exchange surface is mechanically loaded, and there is no way of compensating for the different rates of heat transfer from the inner and outer surfaces. Accordingly, except under the most favourable conditions, smooth-tubed heat exchangers are heavy and cumbersome. The tubes need ribbing, particularly on the gas side, to increase the rate of heat transfer where it is least.
The Institut teploenergetiki AN UKrSSR (Institute of Thermal Power of the AS Ukrainian SSR) selected tubes with longitudinal ribbing for heat exchangers in power gas-turbine sets. The heat-transfer media, air on the inside and gas on the outside,

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