

ZAVOLOTSKIY, T.V., kand.tekhn.nauk, otv.red.; MIKULINSKIY, A.S., prof.,
doktor tekhn.nauk, red.; LOGVINENKO, A.T., kand.tekhn.nauk, red.;
BARKOVA, F.F., kand.khim.nauk, red.; BUSHDYEVA, V.M., red.;
MAZUROVA, A.F., tekhn.red.

[Rare alkali elements; collected papers given at the Conference on
the Chemistry, Technology, and Analytical Chemistry of Rare Alkali
Elements, Jan.27-31, 1960] Redkie shchelochnye elementy; sbornik
dokladov soveshchaniia po khimii, tekhnologii i analiticheskoi
khimii redkikh shchelochnykh elementov 27-31 ianvaria 1958 g.
Novosibirsk, Izd-vo Sibirskogo otd-nia AN SSSR, 1960. 99 p.

(MIRA 13:6)

1. Vsesoyuznoye soveshchaniye po khimii, tekhnologii i analiti-
cheskoy khimii redkikh shchelochnykh elementov. 1st, 1953, Novo-
sibirsk. 2. Khimiko-metallurgicheskiy institut Sibirskogo otde-
leniya AN SSSR (for Logvinenko). (Alkali metals) (Metals, Rare and minor)

21160221151114

ZAVOLZHSKIY, Sergey Germanovich; LESAKOV, V., redaktor; YEGOROV, Yu.,
redaktor; PIOTROVICH, M., tekhnicheskiy redaktor.

[Hungary on the road to socialism] Vengriia na puti k sotsializmu.
Moskva, Gos.izd-vo polit.lit-ry, 1955. 70 p. (MLRA 9:1)
(Hungary--Economic conditions)

ZAVORAL, Milos, inz.

"The KRR equipment" by M.U.Poljak, I.N.Iriman. Reviewed by
Milos Zavoral. Slabrproudy obzor 25 no.10:Suppl:Literatura
25 no.10:L75 '64.

ZAVORIN, V.F., gornyy inzh.

Rhythmic work is an essential condition of labor productivity.

Ugol' 37 no.5:12-14, My '62.

(MIRA 15:6)

1. Shakhta "Chertinskaya-Yuzhnaya" tresta Belovugol', Kuzbass.
(Coal mines and mining--Labor productivity)

ZAVORKA, J.

Control of rectification stations. Automatizace 5 no.3:85 Mr '62.

1. Ustav teorie informace a automatizace, Ceskoslovenska akademie ved.

ZAVORKA, J., inz.

Stability areas in various methods of rectification column control.
Automatizace 5 no.4:115-116 Ap '62.

ZAVONKA, Jiri, Ing. Doc.

Matrix inversion by signal diagrams. Automatizace 7 no.10:272
0 '64.

ZAVORKA, Jiri, inz. CSc.

Calculation of dynamic properties of distillation columns by
means of digital computers. Automatizace 7 no.9:243-245 S '64.

ZAVORKA, Jiri, inz., CSc.

Chromatography and chromatographic analyzers. Automatizace 6
no.6:146-148 Je '63.

1. Ustav teorie informace a automatizace, Ceskoslovenska akademie
vad.

CERMAK, Jiri; ZAVORKA, Jiri

Use of signal-flow graphs in the control technique. Automatizace
6 no.3:60-64 Mr '63.

1. Ustav teorie informace a automatizace, Praha.

CERMAK, J. inz. CSc.; Zavorka, J., inz. CSc.

Evaluation of steam generator efficiency by digital computers.
Strojirenstvi 14 no.4: 243-252 Ap '64

1. Institute of Information Theory and Automation, Czechoslovak
Academy of Sciences, Prague.

GERMAK, Jiri, inz., C.Sc.; ZAVORKA, Jiri, inz., C.Sc.

Use of digital computers for calculating the efficiency of the
block boiler-turbine. Automatizace 12 no.5:221-222 8 Ag '62.

1. Ustav teorie informace a automatizace, Ceskoslovenska akademie
ved, Praha.

ZAVORKA, J., inz.

Bimetal thermometers and their dynamic properties. Automatizace
5 no.7:203 J1 '62.

ZAVORKA, J., inz.

Thermoelectric measurement of small flows. Automatizace 5 no.3:87-88
Mr '62.

STRAFELDA, Frantisek; ZAVORKA, Jiri

Electrochemical analyser of oxygen content in boiler feed water. Automatizace 5 no.5:131-133 My '62.

1. Ustav teorie informace a automatizace, Ceskoslovenska akademie ved.

ZAVOROKHINA, N.A., DEN'KOVSKIY, V.O.

Mechanism of stabilization of clay suspensions by sodium salt of
carboxymethylcellulose. Trudy Inst.nefti AN Kazakh. SSR 2:53-60
'58. (MIRA 11:8)

(Oil well drilling fluids)
(Cellulose)

ZAVOROKHINA, N.A.; KAGANSKAYA, K.A., SUKHAREV, S.S.

Using combined reagents from algae of the genus *fucus* for stabilizing
clay suspensions. Trudy Inst. nefti AN Kazakh, SSR 4:135-142 '61.

(MIRA 16:4)

(Oil well drilling fluids)

AUTHORS: Zavorokhina, N.A., Ben'kovskiy, V.G. SOV-69-58-4-7/18

TITLE: The Problem of the Mechanism of Clay Suspension Stabilization by an Algae Extract (K voprosu o mekhanizme stabilizatsii glinistykh suspenziy ekstraktom iz vodorosley)

PERIODICAL: Kolloidnyy zhurnal, 1958, Vol XX, Nr 4, pp 436-443 (USSR)

ABSTRACT: The speed and the quality of oil well drilling is greatly influenced by the washing liquid. These liquids are clay suspensions in water. The water and clay on oil fields often contains large quantities of electrolytes which cause coagulation in the suspensions. Protective colloids are therefore used, e.g. starch and its derivatives, humic substances of lignite and peat, waste products of paper production, carboxymethyl cellulose, etc. In recent years, an algae extract has been used as stabilizer (Ref. 1), but its mechanism of stabilization is not yet completely investigated. The extract consists mainly of sodium alginate and fucoidin. In the article, the influence of the different components on the colloidal properties of clay suspensions and their stabilizing agent are studied. For this purpose, algin acid and fucoidin were extracted from *Fucus vesiculosus* and aqueous solutions of their sodium salts were prepared. As adsorbents, clays from

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SOV-69-58-4-7/18

The Problem of the Mechanism of Clay Suspension Stabilization by an Algae Extract

Makat, Novobogatinskoye and Kul'sary were used. Their chemical composition is given in Reference 7. Figures 1 and 2 show that the adsorption of sodium alginate and fucoidin on dialyzed clays is considerably less than on natural ones. This is explained by the fact that the water-soluble salts which are present in natural clays in quantities of up to 6.5 % are removed during dialysis, which decreases the adsorption ability. The influence of the chlorides of sodium and magnesium on the adsorption is shown in Figures 3 and 4. The adsorption of sodium alginate increases with the concentration of sodium chloride in the solution. With the increase of the magnesium chloride concentration it reaches a maximum. The adsorption of fucoidin reaches a maximum with the increase of the concentration of the chlorides of magnesium and sodium. The increasing adsorption values may be explained by surface desalting, by the dispersion of the clay particles induced by sodium chloride, by the ion exchange between the magnesium ions and ions from the ionogenic complex of the clays, etc. The dependence of the viscosity of the aqueous solutions of sodium alginate and fucoidin on their con-

Card 2/4

SOV-69-58-4-7/18

The Problem of the Mechanism of Clay Suspension Stabilization by an Algae Extract

centration in the solution is shown in Figure 5. The viscosity of the sodium alginate solution is 3.5 times greater than that of the fucoidin solution. In Table 1, the properties of clay suspensions stabilized by fucoidin, sodium alginate, and the mixture of both are shown. The stabilizing effect of the algae extract is caused by the formation of surface adsorption films of fucoidin preserving the clay particles from coagulation, and by the development of structural-mechanical properties in the suspension due to sodium alginate. The stability of the suspension against electrolytic coagulation is greater in the presence of sodium alginate than in the presence of fucoidin. Clay suspensions stabilized by a basic algae extract are also completely stable in the presence of sodium chloride (Table 2). There are 5 diagrams, 2 tables, and 14 references, 10 of which are Soviet, 2 English, 1 French, and 1 German.

Card 3/4

SOV-69-58-4-7/18

The Problem of the Mechanism of Clay Suspension Stabilization by an Algae Extract

ASSOCIATION: Institut nefiti AN Kaz. SSR, g. Gur'yev (Petroleum Institute of the Academy of Sciences of the Kazakh SSR, Gur'yev)

SUBMITTED: June 10, 1957

1. Algae--Applications 2. Clays--Stabilization

Card 4/4

ZAVORIKHINA, N. A.

15-57-1-1127D

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 1,
p 179 (USSR)

AUTHOR: Zavorikhina, N. A.

TITLE: On the Mechanism of Stabilization of Clay Suspensions
as Applied to Oil Drilling (K voprosu o mekhanizme
stabilizatsii glinistykh suspenziy, primenyayemykh
v burenii na neft')

ABSTRACT: Bibliographic entry on the author's dissertation for
the degree of Candidate of Chemical Sciences,
presented to the Petroleum Institute of the AS
Kazakhstan SSR (In-t nefti AN KazSSR), Gur'yev-
Alma-Ata, 1956.

ASSOCIATION: In-t nefti AN KazSSR (Petroleum Institute of the
AS Kazakhstan SSR)

Card 1/1

ZAVORITSKIY, V.I., inzh.

Determining ground pressure on underground structures.
Avt.dor.i dor.stroi. no.1:137-145 '65.

(MIRA 18:11)

HOREJSI, J., Dr.; ZAVORKA, F., Dr.

Amino nitrogen balance in liver diseases in various diets. Cas.
lek.cesk. 91 no.14:427-432 4 Apr 52.

1. Ustredni laboratore SF N a I. klinika chorob vnitrnich prof.
dr. Netouska v Praze.

(NITROGEN, in urine,

amino nitrogen balance in liver dis., eff. of diet)

(LIVER, diseases,

amino nitrogen balance, eff. of diet)

(DIETS, in various diseases,

liver dis., eff. on amino nitrogen balance)

ZAVORKA, J.

CZECHOSLOVAKIA/Inorganic Chemistry. Complex Compounds

C

Abs Jour : Ref Zhur - Khimiya, No 3, 1958, No 7363

Author : F. Petru., B. Hazeck, J. Zavorka

Inst : Not Given

Title : On the Chemistry of the Rare Elements. II. On Scandium Pyrophosphate.

Orig Pub : Chem. listy, 1957, 51, No 1, 21-26, Sb. chekhosl. khim. rabor, 1957, 22, No 5, 1541-1546

Abstract : The deposit of scandium pyrophosphate, as a result of interaction of solutions of ScCl_3 and $\text{Na}_4\text{P}_2\text{O}_7$ or $\text{Na}_2\text{H}_2\text{P}_2\text{O}_7$ at pH 3.6 and 0.5 was studied. On the basis of potentiometric and conductometric studies of the course of the formation of the deposit and of the results of the analysis of obtained substances, the authors conclude that a formation of $\text{Sc}_4(\text{P}_2\text{O}_7)_3$ takes place in all cases. Part I see RZhKhim., 1957, 50969.

Card : 1/1

F

CZECHOSLOVAKIA/Laboratory Equipment. Instrumentation.

Abs Jour: Ref Zhur-Khin., No 24, 1958, 81415.

Author : Zavorka J., Strafelda F.

Inst :
Title : Mercury Electrode With a Large Surface for the
Lengthy Polarographic Flow Measurements.

Orig Pub: Chem. listy, 1957, 51, No 12, 2374-2376.

Abstract: Described is the design of a polarographic cell, in which Hg, collecting from the dropper type electrode, is continuously diverted from the surface. In so doing, the surface is being continuously rejuvenated as Hg flows from the bottom of the cell into the dropper electrode. The described cell in conjunction with a recording instrument was in operation for 2 months in the service

Card : 1/2

ZAVORKA, Miroslav, inž.

Continuous measurement of the paper moisture. Papir a
celulosa 19 no.9:258-262 S. 161.

1. Research Institute of Paper and Cellulose, Workaita Prague.

ZAVORKS, J.; HAJEK, B.; PETRU, P.

Contribution to the chemistry of rare elements. II. Scandium pyrophosphate. p. 21.
(Chemicke Listy, Praha. Vol. 51, no. 1, Jan., 1957.)

SO: Monthly List of East European Accession (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

ZAVORKA, Jiri, Inz., CSc.

Taking gas samples for industrial gas analyzers. Automatizace
6 no.10:254-256 0 '63.

1. Ustav teorie informace a automatizace, Ceskoslovenska
akademie ved.

ZAVORNYY, P.B.

11(4)

p.3

PHASE I BOOK EXPLOITATION

SOV/1868

Nauchno-tekhnicheskoye obshchestvo neftyanoy promyshlennosti

Puti razvitiya gazovoy promyshlennosti SSSR; materialy Vsesoyuznogo soveshchaniya
(Trends in the Development of the Gas Industry in the USSR; Materials Presented
at the All-Union Conference) Moscow, Gostoptekhizdat, 1958. 432 p. 3,000
copies printed.

Eds: A.D. Brents, B.S. Itsikson, P.G. Komissarov, Ye.A. Krems, V.I. Popov,
V.N. Raaben, N.I. Ryabtsev, P.A. Tesner, A.S. Pal'kevich; Exsc. Eds.:
N.I. Stepanchenko and M.M. Novikova; Tech. Ed.: E.A. Mukhina;
Editorial Board: M.V. Sidorenko (Chief Ed.), K.S. Zarembo, Ye.A. Krems,
V.N. Raaben, and N.I. Ryabtsev.

PURPOSE: The book is intended for specialists engaged in the production and gathering of natural gas, the extraction of gas from coal and shale, the construction and operation of trunk gas pipelines, gas supply to cities, and the processing of gas.

Card 1/11

Trends in the Development of the Gas (Cont.)

SOV/1868

COVERAGE: The authors review the basic trends in the development of the USSR gas industry, the prospecting and exploration of new gas deposits, the gasification of solid fuels, the gathering and utilization of natural gas, the automation of gas field operations, the exploitation of gas wells, and ways to increase output. They further discuss the processing of natural gas with application of refrigeration, the experience gained in the laying and operating of trunk gas pipelines, the automation of gas pipeline operation, and underground gas storage facilities. There are no references.

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AVAILABLE: Library of Congress

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ZAVOROKHIN, N. D.

USSR/Chemistry - Petroleum

Jan 52

"Problem of the Mechanism of Formation of Petroleum Emulsions," V. G. Ben'kovskiy, N. D. Zavorokhin, Ural-Emba Sci Res Base, Acad Sci Kazakh SSR

"Kolloid Zhur" Vol XIV, No 1, pp 15-19

Investigated formation of emulsions by oil-well and distilled waters with asphaltic, asphaltic-paraffinic, and high paraffinic petroleum and pure transformer oil. Selective wetting affects

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USSR/Chemistry - Petroleum
(Contd)

Jan 52

time of emulsification but not type of emulsion formed by pure liquids. Emulsifier determines type of emulsion. Time of emulsification increases with increase of concn of electrolyte in H₂O, temp, and amt of aq phase. Ca and Mg ions present in aq phase decrease time of emulsification.

20317

137-58-6-13066 D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 269 (USSR)

AUTHOR: Zavorokhin, N.D.

TITLE: Acetylene and its Derivatives as Inhibitors of Acid Corrosion of Metals (Atsetilen i yego proizvodnyye kak inhibitory kislотноy korrozii metallov)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Chemical Sciences, presented to the In-t khim. nauk AN KazSSR (Institute of Chemical Sciences, Academy of Sciences, Kazakh SSR), Alma-Ata, 1957

ASSOCIATION: In-t khim. nauk AN KazSSR (Institute of Chemical Sciences, Academy of Sciences, Kazakh SSR), Alma-Ata

1. Metals--Corrosion 2. Corrosion inhibitors--Theory 3. Acetylenes
--Applications 4. Acetylene derivatives--Applications

Card 1/1

ZAVOROKHIN, N. P.
SOKOL'SKIY, D.V.; ZAVOROKHIN, N.D.

Mechanism of the action of acetylene and its derivatives during
acidic corrosion of steel. Vest. AN Kazakh. SBR 13 no.8:59-75
Ag '57. (MIRA 10:9)

(Acetylene) (Steel)
(Corrosion and anticorrosives)

SOV/137-59-1-1952

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 258 (USSR)

AUTHORS: Zavorokhin, N. D., Sokol'skiy, D. V.

TITLE: Effect of Inhibitors on the Polarization of Steel in Sulfuric Acid
(Vliyaniye ingibitorov na polyarizatsiyu stali v sernoy kislote)

PERIODICAL: Tr. In-ta khim. nauk. AN KazSSR, 1958, Vol 2, pp 53-60

ABSTRACT: An investigation was performed by the polarization-curve method of the effect of acetylene, propiolic acid, thiourea, quinoline, and Fe^{3+} ions on the rate of electrode processes in H_2SO_4 . At low D (close to the stationary potential) the inhibitors named impede both cathodic and anodic processes equally. With medium D the cathodic process is inhibited to a greater extent by acetylene, propiolic acid, and quinoline, while the anodic process is impeded greatly by thiourea. The inhibitors investigated show no effect on the process of reduction of Fe^{3+} ions to Fe^{2+} in an extended range of D. Comparison of the results obtained by the polarization and the volumetric methods indicates that the problem of the process of inhibition of the dissolution of metal in the presence of various additives cannot be solved simply on the basis of the displacement of stationary potential and

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SOV/137-59-1-1952

Effect of Inhibitors on the Polarization of Steel in Sulfuric Acid

the shape of the branches of polarization curves.

L. A.

Card 2/2

SOV/137-59-1-1899

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 251 (USSR)

AUTHORS: Zavorokhin, N. D., Sokol'skiy, D. V.

TITLE: Effect of Triple-bond Compounds on the Electrolytic Diffusion of Hydrogen in Steel (Vliyaniye soyedineniy, soderzhashchikh troynuyu svyaz', na elektrodifuziyu vodoroda v stal')

PERIODICAL: Tr. In-ta khim. nauk AN KazSSR, 1958, Nr 2, pp 61-69

ABSTRACT: An investigation was made of the effect of acetylene (I), propiolic acid (II) [the Russian original reads "propylic acid; Trans. Ed. Note], thiourea (III) and quinoline (IV) on the diffusion of H which evolves during the cathode polarization of a steel membrane in 1N H₂SO₄. It was established that I, II, and IV retard the H diffusion, whereas III speeds it up. Addition of III produces an immediate relationship between the electrode potential and the rate of diffusion, whereas in other cases such a relationship is absent. It is indicated that in addition to the rate of discharge the energy of metal-H bond is an important factor in creating overpotential of H under nonequilibrium conditions.

Card 1/1

D. B.

MATROVSKIY, P.Ye.; ZAVOLONITH, N.D.

Kinetics of acetylene polymerization on a complex catalyst.
Report No.1. Izv. AN Kazakh SSR. Ser. khim. nauk 15 no.1:
70-77 Ja-nr. '65. (NERA 18:12)

1. Submitted Oct. 1, 1964.

ZAVOROKHIN, N.D.; MATKOVSKIY, P.Ye.

Mechanism of acetylene polymerization on complex catalysts.
Report No.2. Izv. AN Kazakh. SSR. Ser. khim. nauk 15 no.1:
78-85 Ja-Mr '65. (MIRA 18:12)

1. Submitted Oct. 1, 1964.

ZAVOROKHIN, N.D., kand.khim.nauk; MATKOVSKIY, P.Ye.

Activity of acetylene in the reactions of anionic copolymeri-
zation with olefins. Vest. AN Kazakh. SSR 21 no.11:91 N '65.
(MIRA 18:12)

MATKOVSKIY, P.Ye.; ZAVOROKHIN, N.D.; CHIRKOV, N.M.

Kinetics of nonsteady state of polymerization of α -olefins.
Vysokom. soed. 7 no.9:1484-1488 S '65. (MIRA 18:10)

1. Institut khimii nefti i prirodnykh soed. AN KazSSR i
Institut khimicheskoy fiziki AN SSSR.

ZAVOROKHINA, N. A.

Category: USSR / Physical Chemistry - Surface Phenomena. Adsorption.
Chromatography. Ion exchange.

B-13

Author : Zavorokhina N. A., Ben'kovskiy V. G.

Abs Jour: Referat Zhur - Knimiya, No 9, 1957, 30193

Inst : not given

Title : Adsorption of Carboxymethyl Cellulose on Clays

Orig Pub: Kolloid. zh., 1956, 18, No 5, 536-539

Abstract: A study of adsorption (A) of carboxymethyl cellulose (I) at natural and at dialyzed clays of the Erba fields, and also of the effects of NaCl, MgCl₂ and CaCl₂ (at concentration of 0.1 - 4 N) on A of I by these clays. It is shown that magnitude of A of I at natural clay is considerably greater than that at the dialyzed, and that the nature of A at all the investigated dialyzed clays and at natural Makatskaya clay is sharply altered under the influence of water. With increasing concentration of CaCl₂ and MgCl₂ the value of A passes through a maximum, while in the case of NaCl it undergoes

Card : 1/2

-10-

ZAVOROKHINA, N. A.

Zavorokhina, N. A.

"The problem of the mechanism of stabilizing the mud suspensions used in drilling for oil." Acad Sci Kazakh SSR. Inst of Petroleum. Gur'yev-Alma-Ata, 1956 (Dissertation for the degree of Candidate in Chemical Sciences)

Knizhnaya letopis'
No. 25, 1956. Moscow

ZAVOROKHINA, N.A.; BEN'KOVSKIY, V.G.

Adsorption of sodium humates on clays. Trudy Inst. nefti AN
Kazakh.SSR 3:143-148 '59. (MIRA 13:1)
(Humates) (Adsorption)

ZAVOROKHINA, N.A.; BEN'KOVSKIY, V.G.

Adsorption of carboxymethylcellulose on clays [with English summary
in insert] Koll.shur. 18 no.5:536-539 S-O '56. (MIRA 9:11)

1. Uralo-Embenskaya nauchno-issledovatel'skaya baza, g. Gur'yev.
(Cellulose) (Adsorption)

ZAVORZHINA, N. A.

11(A) PRAISE I BOOK EXPLORATION 800/2868

Abdjalys and Lashabasy EN. Institut nefti
Trudy, t. 3 (Transactions of the Petroleum Institute, Kazakh EN. Academy
of Sciences, Vol. 3) Almaty, Izdato M Kazhabasy EN, 1979. 163 p.
700 copies printed.

Eds. I. M.P. Karmakovskiy and N.Ye. Reshlyevskiy; Tech. Eds.: Z.P. Korokina,
Editorial Board: M.A. Kravtsov (Resp. Ed.), V.G. Benkovskiy, T.R.
Zhangalyshev, and E.A. Javrokhina.

PURPOSE: This book is intended for scientists, engineers, and technicians in
the petroleum industry.

COVER: This volume contains 15 studies on the petroleum geology of eastern
Kazakhstan. The following studies are of special interest: 1) exploration for
water in the southern Eaba region to offset an inadequate water supply; the
possibility of leaching heated water into oil-bearing formations; the possibil-
ity of heating the components of an oil-bearing formation in the absence of the
oil; 2) the possibility of using the heat of the earth's crust for the heating of fields
of oil-bearing formations; 3) the effect of different porosity at various degrees of
saturation and oil saturation; the mineral charges for hydraulic fracturing of
formations at the Eaba oilfields; the adsorption of sodium humates on clay;
and the effect of electrolytes on the quality of clay suspensions. No
translations are mentioned. References accompany individual articles.

Lezhin, V.F. Modes of Occurrence of Patogenic Deposits at the Southern Eaba District of Kazakhstan and Western Ustyurt	61
Koloban, L.B., and E.A. Dubagir'jants. Certain Hydrogeological Regularities in the Southern Eaba Zirkalian Basin	74
Kolpakov, V.B. Ancient Delta of the Eaba River and the Genesis of the Eaba Atrushalye Terraces	82
Kolpakov, V.B. Some Problems of Exploration for Water in the Southern Part of the Eaba Region	87
Ayrapsylyan, V.A. Thermal Flooding of Oil Reservoirs and Methods of Doing It	113
Ayrapsylyan, V.A., V.S. Volkovoy, and Ye. Ye. Meshnikov. Studies of High- Frequency Heating of Oil-bearing Formations	125
Ayrapsylyan, V.A., and B.I. Slutskiy. Some Results of Studying the α and β of for Sands of Different Porosity at Various Degrees of Moisture and Oil Saturation	133
Mescherbryayev, A.V. Mineral Charges for Hydraulic Fracturing of Formations at the Eaba Oilfields	143
Zavorzhina, N.A., and V.G. Benkovskiy. Adsorption of Sodium Humates in Clays	149
Zavorzhina, N.A., and E.S. Shubert. Effect of Electrolytes on the Quality of Clay Suspensions	158
Korokina, Z.P., and L.Y. Shvets. Studies of the Upper Paleozoic Deposits of the Aktobe Region Primarily by the Bitumen Luminescence Method Using Ultraviolet Rays as an Excitation Source	168

ZAVOROKHINA, N.A.; BEN'KOVSKIY, V.G.

Stabilization of clay suspension by an algae extract [with summary in English]. Koll. zhur. 20 no.4:436-443 JI-Ag '58. (MIRA 11:9)

1. Institut nefti AN KazSSR, g.Gur'yev.
(Clay) (Colloids) (Algae)

KONNOV, M.P.; ZAVOROTKOV, L.M., mekhanik; YELIZAROV, P.P., inzh.-mekhanik

Using the SN-2 snow removal machine for station track cleaning.
Put' 1 put.khoz. 7 no.2:18-19 '63. (MIRA 16:2)

1. Nachal'nik stantsii Batraki, Kuybyshevskoy dorogi (for Konnov).
2. Stantsiya Batraki, Kuybyshevskoy dorogi (for Zavorotkov).
3. 1-ya Moskovskaya distantsiya (for Yelizarov).

25(2) PHASE I BOOK EXPLORATION 307/1536

Novyye mashiny i sbornik stat'ey o novykh mashinakh, motorakh, i priborakh sotsialnaya na Khar'kovskikh predpriyatiyakh v period 1946-1956 gg. (New Machines; Collection of Articles on New Machines, Motors, and Apparatus Made in Dhar'kov Plants From 1946 to 1956) /Dhar'kov/ Dhar'kovskoye ob'edyneniye izd-vo, 1956. 226 p., 4,000 copies printed.

Compiler: P.I. Zmaga; Scientific Eds.: V.A. Reigakov (Chief Engineer, Dhar'kov Electromechanical Plant), J.A. Vorob'yev (Candidate of Technical Sciences, Decant) Ltd., and Ivan-Shubin (Chief Machine Designer, Dhar'kov Turbine Plant, and Corresponding Member, Ukrainian SSR Academy of Sciences); Ed.: N.S. Domanyl' Tech. Ed.: M.G. Shvachenko.

PAROS: This collection of articles is to acquaint the reader with the latest developments and attainments of the Dhar'kov machinery manufacturing industry during the 1956-58 period.

CONTENT: The book, prepared in the form of a descriptive catalog, presents the latest information on machinery and equipment manufactured by Dhar'kov plants from 1956-58. A detailed description is given of the following machines and equipment: steam turbines, generators, self-propelled chassis, diesel engine, steam locomotives, machines tools including unit metal-cutting machine tools, conveyor systems, feed building machinery, electric power generators, and electrical and electronic instruments. Numerous photographs of the above-listed machinery and equipment are included in the text. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Zmaga, P.I., Director of the Machinery Manufacturing Division of the Dhar'kov Plant, Vice Chairman of the Ukrainian Communist Party. On the Path to Further Technological Progress 3

Yakusheva, A.I., Vice Chairman of the Sovnarkhoz of the Dhar'kov Economic Administrative Region. New Technology as a Powerful Lever for the Growth of Labor Productivity 15

Card 2/6

New Machines; Collection of Articles (Cont.) 307/1536

Zagorodnyy, I.P., Chief Designer of the Dhar'kov Plant for Melting and Transport Equipment Internal Locomotives. Equipment for the Mechanization of Heavy and Labor-consuming Jobs 154

ELECTRICAL MACHINES AND APPARATUS

Berezhko, V.S., Chief Engineer of the Dhar'kov Plant for Diesel Locomotive Electrical Equipment. For a New Technology! 161

Ponomarev, S.A., Director of the Dhar'kov Electrical Engineering Plant. Basic Problems in Development of Electrical Machinery and Instrument Manufacture at the ENIKP (Electromechanical Plant) Mechanically saved -- Dhar'kov Electromechanical Plant 175

Slackikh, A.I., Director of the Dhar'kov Electrical Engineering Plant. Let Us Increase the Output of Electric Motors and Electrical Instruments 187

Card 3/6

ZAVOROTNYI, A. Ya.

Using centrifugal pumps for pumping cracking residues.
Neftianik 7 no.1:12 Ja '62. (MIRA 15:2)

1. Nachal'nik Stroitel'no-montazhnogo upravleniya No.4 tresta
Bashneftekhim-zavodstroy.
(Cracking process)
(Centrifugal pumps)

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964010016-3

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ZAVOROTNOVA, O.I.

Spectral analysis of combined rare earth elements in the presence
of tin. Izv.Sib.otd.AN SSSR no.5:117-119 '61. (MIRA 14:6)
(Rare earth metals) (Tin--Analysis)

ZAVOROTNOVA, G.I.

Effect of chemical reactions on the evaporation time of tin
from the crater of a carbon electrode. Zhur. anal. khim. 20
no.6:671-675 '65. (MIRA 18:7)

1. Tsentral'nyy nauchno-issledovatel'skiy institut slovyanney
promyshlennosti, Novosibirsk.

ZAVOROTNOVA, G.I.

Effect of the percentage content of an intermediate standard
substance on the accuracy of spectrum analysis. Izv. Sib. otd.
AN SSSR no.7:114-116 '61. (MIRA 14:8)
(Spectrum analysis--Standards)

ZAVOROTNOVA, G.I.

Systematic error of the results of tin spectral determination
as dependent on the amount of chemical reagents. Zhur. anal.
khim. 20 no.7:774-777 '65. (MIRA 18:9)

1. Central Scientific-Research Institute of Tin Industry,
Novosibirsk.

ZAVOROTNYKH, I.R.; TITOV, V.N.

Geology of the deposits of the Pokrovske-Gurulevskoye ore field.
Trudy IGEM no.83:238-264 '63. (MIRA 16:11)

MIKHAYLOV, S.; ZAVOROTNYY, R.

The new GAZ-66 motortruck. Avt. transp. 43 no.2129-33 F '65.
(MIRA 18:6)

1. Gor'kovskiy avtozavod.

BOMBCHINSKIY, V.P.; VTOROV, N.A.; DUNDUKOV, M.D.; YEGOROV, S.A., doktor tekhn.nauk, prof.; YERMOLOV, A.I.; ZAVORUYEV, V.P.; KALININ, V.V.; KACHEROVSKIY, N.V.; KUZNETSOVA, A.K.; KUZ'MIN, I.A., kand.tekhn.nauk; MEDVEDEV, V.M., kand.tekhn.nauk; MIKULOVICH, B.F.; MIKHAYLOV, V.V., kand.tekhn.nauk; PETRASHEN', R.N.; REYZIN, Ye.S.; SINYAVSKAYA, V.M.; KHALTURIN, A.D.; SHCHERBINA, I.N., kand.tekhn.nauk; SEVAST'YANOV, V.I., red.; KARAULOV, B.F., retsenzent; LOVEFSKIY, Ye.S., retsenzent; MIKHAYLOV, A.V., doktor tekhn.nauk, retsenzent; NATANSON, A.V., retsenzent; SOKOL'SKIY, M.M.; retsenzent; STANKEVICH, V.I., retsenzent; FREYGOFER, Ye.F., retsenzent; GOTMAN, T.P., red.; VORONIN, K.P., tekhn.red.

[Work of the All-Union Scientific Research Institute for the Study and Design of Hydraulic Structures] Nauchno-issledovatel'skie raboty Gidroproekta. Pod obshchey red. V.I. Sevast'ianova. Moskva, Gos.energ.izd-vo, 1961. 214 p. (MIRA 15:2)

1. Moscow. Vsesoyuznyy proyektno-izyskatel'skiy i nauchno-issledovatel'skiy institut Gidroproyekt imeni S.Ya.Zhuk. Nauchno-issledovatel'skiy sektor.

(Hydraulic engineering--Research)

ZAVORUYEVA, R. S., LIKHTENSHTEYN, G. A.

Polishing felt equipment with fibers running perpendicularly to
the glass surface. Stek. 1 ker. 17 no.8:37 Ag '60.
(MIRA 13:8)

(Glass) (Grinding and polishing)

POKROVSKIY, Aleksandr Andreyevich; GLAZYRIN, Aleksandr Ivanovich; DUBOV, Aleksandr Grigor'yevich; ZAVORYKIN, Boris Sergeevich; SHURKHIN, Semen Abramovich; MIKHALKEVICH, T.V., redaktor; DZHATIYEV, S.G., tekhnicheskiiy redaktor

[Practical work in physics for senior classes of secondary schools; a manual for teachers] Praktikum po fizike v starshikh klassakh srednei shkoly; posobie dlia uchitelia. Pod red. A.A.Pokrovskogo. Izd. 3-e, ispr. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosveshchenia RSFSR, 1956. 288 p. (MLRA 9:10)
(Physics—Problems, exercises, etc.)

43783

G/025/62/000/004-5/004/005
I041/I241

11.3800

AUTHORS: Uvarov, O.V., Sokolov, N.M., and Zavosonokov, N.M.

TITLE: Physico-chemical constants of H₂O¹⁸

PERIODICAL: Kernenergie, no.4-5, 1962, 323-329 ;

TEXT: The elementary separation factor for the system H₂O¹⁶-H₂O¹⁸ in the temperature range from 20-210°C was determined by a differential vapour pressure measurement method. The results are given by the formula $\alpha = 0.9835 \exp(7.598/T)$. From these results one calculates the difference in latent heat of evaporation of the two water species as 14.98 cal/mole and the boiling point of pure H₂O¹⁸ at atmospheric pressures as 100.13°C. The refractive index difference - Δn - between light and heavy water was measured at 20°C with the results: $\Delta n = 3.4 \cdot 10^{-4}$. The temperature coefficient of the refractive index difference between 10° - 30°C was found to be

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G/025/62/000/004-5/004/005
I041/I241

Physics-chemical constants of H_2O^{18}

(1.18-1.20) 10^{-6} . The density of enriched waters of varying H_2O^{18} concentration was measured at 25°C and 30°C and the result obtained was $d = A + 0.00107 \cdot N$ where N = water concentration of H_2O^{18} and A at 25° = 0.99720. Pure H_2O^{18} at 25° is then 1.10723 denser than normal water. There are 5 drawings including a schematic sketch of the differential vapour pressure apparatus and 6 table of results (translator's note: modified translation of author's abstract)

ASSOCIATION: Karpov Institut for Physical Chemistry, Moscow.

SUBMITTED: Paper presented at the 2nd conference on Stable Isotopes, October 30, - November 4th, 1961.

Card 2/2

LYLOV, D.V.; SUSLENNIKOV, V.V.; ZAVOVIT, A.V.; Primali uchastiye:
IVASHIN, N.A.; PIGOLEV, S.V.; AFANAS'YEV, S.G.; TROITSKIY,
P.S., red.; ZAMYSHLYAYEVA, I.M., red. izd-va; SALAZKOV,
N.P., tekhn. red.

[Special purpose motor vehicles for fire prevention] Avtomob-
bili spetsial'nykh sluzhb pozharnoi okhrany. Moskva, Izd-vo
M-va kommun.khoz.RSFSR, 1960. 274 p. (MIRA 16:10)

(Motor vehicles)

(Fire departments--Equipment and supplies)

ZAVOYCHINSKIY, B.I.

A problem in the deformation of an elastoviscoplastic material.
Vest. Mosk. un. Ser. 1: Mat., mekh. 19 no.5:29-38 S-0 '64.
(MIRA 17:12)•

1. Kafedra teorii uprugosti Moskovskogo universiteta.

ZAVOYEV, S. A.

"Lupinin and Its Oxidation". (p. 194)
(Chair of Org Chem, Mil Med Acad imeni S. M. Kirov)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1948, Volume 18, No. 2

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Zavoyskaya, A. K. and Filosofova, T. G.

Duration of diphtherial bacillus-carrying in connection with the
state of immunity. p. 207

Materialy nauchnykh konferentsii, Kiev, 1959. 208pp
(Kievskiy Nauchno-issledovatel'skiy Institut Epidermiologii i Mikrobiologii)

FILOSOFOVA, T.G.; SHEKHTER, A.B.; GRUSHETSKAYA, Z.I.; ZAVOYSKAYA, A.K.

Angina scarlatinosa. Zhur. mikrobiol. epid. i immun. no.12:38-40
D '55. (MLRA 9:5)

1. Iz Kiyevskogo instituta epidemiologii, mikrobiologii i in gigiyeny
(dir.-kandidat meditsinskikh nauk S.N. Terekhov, nauchnyy
rukovoditel' prof. Gramoshevskiy.

(PHARYNGITIS,

angina scarlatinosa)

(SCARLET FEVER, complications,
angina scarlatinosa)

FILOSOFOVA, T.G.; SHEKHMER, A.B.; ZAVOYSKAYA, A.K.

Study of diphtherial morbidity in 1952 in Kiev. Zhur.mikrobiol.
epid. i immun. 27 no.4:64-69 Ap '56. (MLBA 9:7)

1. Iz Ukrainского instituta epidemiologii, mikrobiologii i gigiyeny
v Kiyevе.

(DIPHTHERIA, epidemiol.
in Kiev, Russia)

ФИЛОСОВА, Т.Г.; ШЕКХТЕР, А.Б.; ЗАВОЙСКАЯ, А.К.; ГРУШЕТСКАЯ, З.И.

Role of convalescents in the epidemiology of scarlet fever. Zhur.
mikrobiol.epid. i immun., supplement for 1956:28 '57 (MIRA 11:3)

1. Iz Kiyevskogo instituta epidemiologii i mikrobiologii.
(SCARLET FEVER)

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964010016-3

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964010016-3"

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APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001964010016-3"

ALIKHANOV, A. I.; ZAVOYSKIY, V. K.; SERDYUK, R. L.; ERSHLER, B. V.; SUVOROV, L. Ya.

[Boiling homogeneous nuclear power reactor] Kipiashchii energeticheskiy gomogennyi iadernyi kotel; doklady, predstavlennye SSSR na Mezhdunarodnuu konferentsiiu po nirnomu ispol'zovaniuu atomnoi energii. Moskva, 1955. 13 p. [Microfilm] (MIRA 9:3)
(Nuclear reactors)

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001964010016-3

САВЫСКИЙ, В.К.

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001964010016-3"

ZAVOYSKIY, V.K.

89-3-10/30

AUTHORS: Zavoyskiy, V. K. , Vorob'yev, V. N. , Serdyuk, R. L.

TITLE: The Density of a Steam-Water Mixture Formed on Reducing the Pressure in a Vessel Containing Heated Water (Plotnost' parovodyanoy smesi, obrazuyushcheysya pri umen'shenii davleniya v sosude s nagretoy vodoy)

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 3, pp. 285 - 286 (USSR)

ABSTRACT: The dependence of the density mentioned in the title was determined experimentally. The density of the steam-water mixture was measured by means of the change of intensity of a γ -ray which passed the experimental apparatus (a steel balloon). Radioactive silver served as radiator. A 3% terphenyl solution in xylene connected with a counter (resolving time 1,4 μ s) was used as counting device. 2/3 of the height of the balloon were filled with water and then heated. As soon as the steam pressure within the balloon reached about 50 atm. excess pressure the heating was interrupted for some time until all parts had an equilibrium tem-

Card 1/2

89-3-10/30

The Density of a Steam-Water Mixture Formed on Reducing the Pressure in a Vessel Containing Heated Water

perature. When the valve was then opened the counting device was automatically switched on. Each experiment lasted for 1 to 2,5 minutes. Within this time the pressure dropped to 5 atm. excess pressure.

The found dependence between the share of the steam cross section in the vessel φ and the volume velocity of the steam in relation to the total cross section of the vessel with various velocities of steam pressure drop is linear. There are 2 figures.

SUBMITTED: October 28, 1957

AVAILABLE: Library of Congress

1. Water vapor-Density-Measurement

Card 2/2

28(4)

05763

AUTHORS: Zavoyakiy, V. K., Serdyuk, R. L.

SOV/32-25-10-52/63

TITLE: Laboratory-plate-rectification Column With Low Liquid Volume on the Plates

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 10, p 1270 (USSR)

ABSTRACT: For the separation of radioactive and expensive mixtures several cup-rectification columns with various new types of plates were constructed and tested. A quartz plate column (Fig) was found to be the most useful. The plate is basically a cylindrical cup with flat bottom. On the latter there is the drain pipe and the cup containing the vapor nozzle. The cup has an oval cross section and at its lower edge it has openings for the passage of the vapor. At the bottom of the plate there is a separating wall which prevents the direct flowing-off of the condensate between the drain pipes, and also establishes better contact between liquid and vapor. During the operation of the column there is less than 5 ml liquid on a plate. Attempts at alcohol-water separation on a column of this kind with 11 plates resulted in a degree of efficiency of 0.98. In collaboration with I. A. Rybin a column of the same dimensions was constructed from stain-

Card 1/2

Laboratory-plate-rectification Column With Low
Liquid Volume on the Plates

05763

SOV/32-25-10-52/63

less steel, which is able to operate up to a pressure of 100 atm. The column may be used for isotope separation or for washing out liquids and vapors from dissolved or dispersed impurities. There is 1 figure.

ASSOCIATION: Teplotekhnicheskaya laboratoriya Akademii nauk SSSR
(Pyrometric Laboratory of the Academy of Sciences, USSR)

Card 2/2

20185

S/089/61/010/003/016/021
B102/B205

11.9400

AUTHOR: Zavoyskiy, V. K.

TITLE: The growth of vapor bubbles moving in a spatially heated liquid

PERIODICAL: Atomnaya energiya, v. 10, no. 3, 1961, 272-274

TEXT: When calculating homogeneous boiling reactors, it is necessary to know the rule governing the growth of vapor bubbles in a hot liquid. The present "Letter to the Editor" shows that the rate of growth of moving vapor bubbles is chiefly determined by the velocity of convective heat supply, provided the thermal load is not too strong. Assuming that the rate of growth be determined solely by the heat supply, the increase in energy of a bubble per unit time is given by $r\gamma'' \frac{dV}{dt} = \int \lambda(\frac{\partial T}{\partial R})_R dS$, where r is the heat of vapor formation, λ the coefficient of thermal conductivity of the liquid, γ'' the density of the vapor, V , S , and R are the volume, surface, and radius, respectively, of a bubble at the instant t , $(\frac{\partial T}{\partial R})_R$ is the temperature gradient of the liquid on the surface

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20185

The growth of vapor bubbles ...

S/089/61/010/003/016/021
B102/B205

X

of the bubble; $\int a(\partial T/\partial R)_R dS = k_1 (au/R)^{1/2} R^2 \Delta T$, where k_1 is a constant factor, a the coefficient of thermal diffusivity ($a = \lambda/c\gamma'$, λ - specific heat, γ' density of the liquid), u the velocity of the rising bubble, and ΔT is the temperature difference in the liquid between the surface of the bubble (T'') and at a certain distance from it (T'). From these equations, the rate of growth of the bubble is determined to be

$dV/dt = k_1 \frac{c\gamma'}{r\gamma''} (au/R)^{1/2} R^2 \Delta T$. An average value is taken as the radius of the bubbles deformed while rising. In $\Delta T = T' - T''$ the temperature, T'' , on the surface of the bubble is equal to the temperature of the saturated vapor. By putting $dz = u dt$ and $R^{3/2} \sim V^{1/2}$ one obtains

$V^{1/2} - V_0^{1/2} = k_2 \frac{c\gamma'}{r\gamma''} (a/u)^{1/2} \Delta T (z - z_0)$, where z_0 is the distance at which the bubble has attained the volume V_0 . If $V_0 \ll V$ and z_0 can be set equal to 0, then $V = k_2^2 (c\gamma'/r\gamma'')^2 \frac{a}{u} \Delta T^2 z^2$. If all the bubbles are formed in the same plane ($z=0$, e.g., bottom of the vessel), then the entire volume

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20185

The growth of vapor bubbles ...

S/089/61/010/003/016/021
B102/B205

of all the bubbles in a liquid layer of thickness Δz (at a distance z from the bottom of the vessel) is given by $VNs\Delta z = k_2^2(\sigma\gamma'/r\gamma'')^2 \frac{a}{u} \Delta T^2 z^2 Ns\Delta z$, where N is the number of vapor bubbles per unit volume, and s the cross-sectional area of the vessel. The contribution of vapor to the volume of the liquid at the level z is thus given by

$$\eta = k_2^2(\sigma\gamma'/r\gamma'')^2 \frac{a}{u} N \Delta T^2 z^2.$$

The correctness of the equations presented here was verified by photographing bubbles in a glass vessel. The photographs permitted the determination of the size of large and medium bubbles with an error of 1-3%, and that of small bubbles with one of 5-10%. Comparative measurements showed k_1 to be equal to 11. The equation for η was likewise experimentally verified by measuring the specific vapor content at different levels. The experiments are discussed in detail, and the results are graphically represented. The validity of the formulas was confirmed. V. G. Levish and V. M. Byakov are thanked for discussions, and V. N. Vorob'yev, S. V. Goncharov, G. I. Savel'yev, and A. F. Semin for

Card 3/4

20185

The growth of vapor bubbles ...

S/089/61/010/003/016/021
B102/B205

X

assistance. There are 6 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet bloc.

SUBMITTED: June 7, 1960

Card 4/4

ZAVOYSKIY, V.K.

Growth of a bubble of vapor moving in a liquid heated throughout its
volume. Atom. energ. 10 no.3:272-274 Mr '61. (MIRA 14:3)
(Bubbles) (Ebullition)

ZAVOYSKIY, V.K.

Stationary boiling of a bulk-heated liquid. Atom.energ. 10 no.5:
521-523 My '61. (MIRA 14:5)

(Ebullition)

ZAVOYSKIY, V.K.

Density of a water-steam mixture heated throughout its bulk. Atom.
energ. 10 no.4:381 Ap '61. (MIRA 14:4)
(Steam, Superheated) (Nuclear reactors)

22611
S/089/61/010/004/014/027
B102/B205

21.1700

AUTHOR: Zavoytskiy, V. K.

TITLE: Density of a steam-water mixture heated throughout its bulk

PERIODICAL: Atomnaya energiya, v. 10, no. 4, 1961, 381

TEXT: The moderator density in a homogeneous boiling reactor is determined by the distribution character of the heating of the liquid and of the vaporization nuclei in the volume of the core. The relationship between moderator density and reactor power had not yet been formulated up to now. In the present "Letter to the Editor", this is done for the case where the liquid is uniformly heated throughout the volume of the core and the vaporization nuclei are in its lower part. These requirements are met if the content of steam in the reactor is low. The density distribution with respect to the height in the case of a steam-water mixture heated throughout its bulk between two horizontal electrodes has been studied by the author already earlier (Atomnaya energiya, 10, vyp. 3, 272, (1961)) for the case where the steam bubbles are formed on the surface of the lower electrode. It has been shown that the steam content φ of the volume

X

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Density of a...

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X

between the two electrodes is proportional to the square of the distance from the lower electrode: $\psi \sim z^2$. In the region above the upper electrode, the content of steam remains constant, and $N = k\psi(H)$, where N indicates the power generated between the two electrodes, and $\psi(H)$ the steam content of the volume over the upper electrode; k is a proportionality factor, and H is the electrode spacing. From these relations one obtains the following expression for the average content of steam in the volume of the liquid

between the electrodes: $\bar{\psi} = \frac{1}{H} \int_0^H \psi dz = \frac{1}{3} \psi(H)$. The content of steam

averaged over the height in a liquid heated throughout its bulk is, thus, one-third as high as in the case of bubbling. The expression $N = 3k\bar{\psi}$ interrelates the average content of steam and the power generated in the liquid heated throughout its bulk. There is 1 Soviet-bloc reference.

SUBMITTED: November 4, 1960

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22082

S/089/61/010/005/010/015
B102/B214

11.9400

AUTHOR: Zavoyskiy, V. K.

TITLE: Steady boiling of a volume heated liquid

PERIODICAL: Atomnaya energiya, v. 10, no. 5, 1961, 521-523

TEXT: The present "Letter to the Editor" is connected with an earlier paper (Zavoyskiy, Atomnaya energiya, 10, n. 3, p. 272 (1961)). Some regularities hold for the boiling of a liquid in whose volume heat sources are regularly distributed. It was shown in the previous paper that during steady boiling the radius of a moving vapor bubble is given by $R = (k\alpha u)^{1/3} (\sigma \gamma' \Delta T t / r \gamma)^{2/3}$, where k is a constant coefficient; γ' , σ , and α denote, respectively, the density, the specific heat, and thermal diffusivity of the liquid; r is the heat of bubble formation, γ the vapor density, u the relative velocity of the bubble in the liquid, ΔT the temperature difference of the liquid and the vapor, and t is the lifetime of the bubble, the time for which the bubble lasts in the boiling liquid. For the derivation of this formula it was assumed that u and ΔT are

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