VASIL'YEV, Yu.S.; KALININ, A.G.; POPOV, V.M.

Effect of deflecting force on the extent of well deflection.
Trudy VNIIBT no.10:88-92 '63. (MIRA 17:4)

VASIL'YEV, Yu.S.; KALININ, A.G.; POPOV, V.M.

Relation between the loads on the hook when hoisting and lowering and the loads on the bottom in a well that is slightly crooked. Trudy VNIIBT no.14:102-105 '65. (MIRA 18:5)

VASIL'YEV, Yu.S., KALININ, A.G.; POPOV, V.M.; LOBANOV, Yu.K.

Effect of the configuration of a slant hole on the load on the hook when lifting a tool. Trudy VNIIBT no.14:98-101 '65. (MIRA 18:5)

GLADILIN, Anatoliy Nikolayevich, kand. tekhn. nauk, dots.; SYROTEGIN, Aleksandr Aleksandrovich, kand. tekhn. nauk, dots.; POPOV, Viktor Mikhaylovich, st. prepod. MAKIYENKO, N.I., retsenzent; ZHIDELEV, M.A., retsenzent; OVSYANNIKOVA, Z.G., red.

[Course of industrial training in technical schools for mechanical engineering for operators of grinders, planers, and drilling machines] Kurs proizvodstvennogo obucheniia v mashinostroitel'nykh tekhnikumakh dlia rabochikh professii: shlifovshchik, strogal'shchik i sverlovshchik. Moskva, Vysshaia shkola. Pt.3. 1965. 315 p. (MIRA 18:8)

POPOV, V.M. DECEASED c1958 1961/I

See IIc

EPIDEMIOLOGY/ IMMUNOLOGY/MICROBIOLOGY

PETUKHOV, B.S.; POPOV, V.N.

Theoretical calculation of the heat transfer and frictional resistance in the laminar flow in tubes of an incompressible fluid with variable physical properties. Teplofiz. vys. temp. 1 no.2:228-237 S-O'63. (MIRA 17:5)

1. Moskovskiy energeticheskiy institut.

L 07693-67 (N) SOURCE CODE: UR/0089/66/020/003/0279/0281

ACC NR: AP6021635

AUTHOR: Brazhnikov, Ye. M.; Dzantiyev, B. G.; Popov, V. N.; Russiyan, Ye. K.; Shalomeyev, A. S.

ORG: none

TITLE: Installation for the investigation of processes of chemonuclear synthesis under laboratory conditions

SOURCE: Atomnaya energiya, v. 20, no. 3, 1966, 279-281

TOPIC TAGS: chemical synthesis, chemical energy conversion, fission product, radiation chemistry/ KhYaU-4 chemical synthesis unit, IRT nuclear reactor

ABSTRACT: The article deals with a possible direct use of atomic energy by transforming the energy of the fission fragments directly into chemical energy, bypassing intermediate energy forms such a smechanical, thermal, or electrical. In such a process, a mixture of simple gases passes through a chemonuclear unit, which is essentially a flow-through fuel element. The radiation produces radiation-chemical reactions that produce the end products. An example is the production of NO_2 from air under the influence of radiation. The authors describe special devices for the production of chemonuclear synthesis constructed at the Institute of Chemical Physics AN SSSR, in particular a circulating chemonuclear installation (KhYaU-4), intended to investigate synthesis in the gaseous phase under laboratory conditions. The apparatus constitutes a closed loop in which the gas mixture is circulated by a com-

UDC: 621.039: 541.15

Card 1/2

L 07893-67

ACC NR: AP6021635

pressor. The products of the chemonuclear synthesis are produced continuously as the gas mixture flows through a thermostatically maintained irradiator located in the vertical experimental channel of a research reactor. The irradiator tubes are filled with finely dispersed nuclear fuel, such as glass wool containing U^{235}, B^{10}, or Li^{6}. Another version of the irradiator, in which the fuel is deposited on discs, is also used. The reactor products are extracted from the gas mixture in a block of traps. A filter block decontaminates the gas mixture. The apparatus can also be used with other sources of ionizing radiation (electron accelerator, cyclotron, or cobal installation). The apparatus described was tested with the electronic accelerator of the Institute of Chemical Physics AN SSSR, in the IRT-1000 reactor of the Institute of Atomic Energy im. I. V. Kurchatov, and in the IRT-2000 reactor of the Institute of Nuclear Power AN BSSR. The experiments have shown that the KhYaU-4 apparatus permits investigation of chemonuclear synthesis processes in various gas systems. Orig. art. has: 3 figures.

SUB CODE: 18/ SUBM DATE: 14Aug65/ ORIG REF: 001/ OTH REF: 001

Card 2/2

ACC NR: AT6031757 SOURCE CODE: UR/3092/66/000/004/0077/008

AUTHOR: Popov, V. N.

ORG: None

TITLE: Static characteristics of the slot device

SOURCE: Moscow. Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury. Elektrofizicheskaya apparatura, no. 4, 1966, 77-83

TOPIC TAGS: particle accelerator, particle accelerator component, charged particle, particle beam, particle cross section, gaussian distribution, ion beam, ion beam focusing

ABSTRACT: The static characteristics of the slot device, consisting of two conducting plates which of themselves form the slot, and which is used as the sensor in systems for stabilizing the energy in a charged particle beam in direct current accelerators, are calculated on the basis of the following assumptions: (1) the charged particle beam leaving the analyzer is of elliptical cross section; (2) the cross section of the beam is oriented relative to the slot (one of the axes of the elliptical cross section is parallel to the slot); (3) the width of the plates making up the slot device is much larger than the beam's cross sectional dimension (always so in practice); (4) there is no emission of charged particles from the

Card 1/2

ACC NR: AT6031757

plates; (5) distribution of current density in the beam along the axes of the elliptical cross section is Gaussian. The results of the calculations suggest the need for compromise between the desirable slot transmission coefficient and permissible beam losses on the plates, and note is made of the fact that improving the focusing of the ion beam can improve the slot transmission coefficient while keeping losses at the same level as before. Orig. art. has: 15 formulas and 3 figures.

SUB CODE: 20/SUBM DATE: None/ORIG REF: 004/OTH REF: 001

Card 2/2

POPOV,V.N., kandidat tekhnicheskikh nauk

Hinge joints for gravity circulation pipelines and device for washing them out. Tekh.zhel.dor. 6 no.10:30 0'47. (MLRA 8:12)
(Pipelines)

MAKAVETSKAS, R.A.; OPOV, V.N.; TSEDERBERG, N.V.

Experimental study of the viscosity of helium and nitrogen.
Teplofiz. vys. temp. 1 no.2:191-197 S-O'63. (MIRA 17:5)

1. Moskovskiy energeticheskiy institut.

POPOV, V. N.

Popov, V. N. "The sanitary-hygienic characteristics of the Vyatka River in the portion near the city," Trudy Kirovskogo in-ta epidemiologii i mikrobiologii, Collection 2, 1948, p. 56-63.

SO: U- 3736, 21 May 53, (Letopis 'Zhurnla 'nykh Statey, No. 17, 1949).

POPOV, V.N.; STEPANOV, V.A.; STISHEVA A.G.; TRAVNIKOVA N.A. (Moskva)

Programming program. Zhur. vych. mat. i mat.fiz. 4 no.1:72-95 Ja-F '64. (MIRA 17:6)

ARKHANGORODSKIY, L.A.; BUKSHTEYN, Ya.A.; VOROB'YEV, S.V.; GAYENKO, P.A.; DOLGOV, Ye.N.; ZHIGLIN, A.A.; ZUBOVSKIY, G.P.; ISHKOV, I.G.; KRYZHANOVSKAYA, G.L.; LISTRATOV, A.A.; LUK'YE, R.I.; MOROZOV, N.P.; OSTROZETSER, A.S.; PAVLOV, N.A.; PETROV, L.M.; POPOV, V.N.; TARTAKOVSKIY, I.A.; TAUBE, D.K.; KHANIN, L.T.; SHAPIRO, TS.S.; SHVAYTSBURG, B.A.; SHEVTSOV, V.D.; DENISENKOVA, L.M., red.

[Assembler's handbook on performing mechanical assembly and special work on grain elevators and grain processing enterprises] Spravochnik montazhnika; po proizvodstvu mekhanomontazhnykh i spetsial'nykh rabot na elevatorakh i predpriiatiiakh po pererabotke zerna. Moskva, TSentr. in-t nauchno-tekhn. informatsii i tekhniko-ekon. issl., 1963. 519 p. (MIRA 17:7)

YESTIFEYEV, A.M., professor; POPOV, V.N., kandidat tekhnicheskikh nauk.

Graphic analysis methods for pipe freezing. Izv.VNIIG 41:123-128 '49.
(Pipelines--Cold weather conditions) (MLRA 10:2)

POPOV, V.N., kandidat tekhnicheskikh nauk; GONCHAROV, F.S., inzhener; SOLOVOV, A.N., inzhener.

Instrument for the automatic measurement of water and other fluid flow by the volumetric method. Rats. i izobr.predl.v stroi. no.94:24-28 '54. (MLRA 8:8)

1. Otdel izobretatel'stva i ratsionalizatsii Ministerstva stroitel'stva. (Flow meters)

POPOV, V. N.

POPOV, V. N.- "Investigation of the Conditions of Stream Flow in the Upper Water of an Improved Spillway." Min of Higher Education USSR, Kiev Automobile and Highway Inst, Kiev, 1955 (Dissertations For Degree of Candidate of Technical Sciences)

SO: Knizhnaya Letopis' No. 26, June 1955, Moscow

POPOV, V.N., kandidat tekhnicheskikh nauk.

Earth-soil methods of biological purification of household-fecal sewage for small capacity installations. Sbor.trud.VNIIGS no.6:5-58 '55. (MLRA 9:7)
(Sewage--Purification)

124-58-9-9869

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 57 (USSR)

AUTHOR: Popov, V. N.

TITLE: The Velocity and Depth of the Stream Flow in the Headwater of Overfall Spillways (Skorost' i glubina protekaniya potoka v verkhnem b'yefe perepadov)

PERIODICAL: Tr. Kiyevsk. avtomob.-dor. in-ta, 1957, Nr 3, pp 134-144

ABSTRACT: Presentation of a calculation method for a nonsubmerged overfall spillway with a relative great length of the drop; the method is approximately applicable for sections having any desired regular geometric shape and for any desired straight slope of the bottom. The solution of the problem is based on the application of the law of the quantity of motion. The author introduces a coefficient which represents the ratio between the resultants of the actual excess pressure on the contour of the overfall and the pressures corresponding to the hydrostatic pressure distribution. This coefficient accounts for the character of the flow of the stream on the overfall spillway (free, with air venting, without air venting, with suction). The author's experiments substantiate M. D. Chertousov's deductions to the effect

Card 1/2

The Velocity and Depth of the Stream Flow (cont.)

that when the slope of the drop is subcritical, the depth above the contour of the overfall is not equal to the critical value, but is smaller. Consequently the flow velocity exceeds that corresponding to the critical depth. This velocity exceeds the critical velocity by 40 to 70 percent, depending on the flow conditions and the cross-sectional shape of the stream bed (rectangular, trapezoidal, or triangular). It is to be noted that the presentation of the paper is not sufficiently rigorous. Bibliography: 13 references.

B. I. Bek-Marmarchev

1 Dams--Properties 2. Inland waterways--Velocity 3. Fluid flow--Analysis
4. Mathematics--Applications

Card 2/2

AM4008927 BOOK EXPLOITATION S/

Stepanov, A. A.; Popov, V. N.

Chemical warfare weapons and principles of anti-chemical warfare defense (Khimicheskoye oruzhiye i osnovy* protivokhimicheskoy zashchity*), Moscow, Voyenizdat, 1962, 123 p. illus., biblio. Errata slip inserted. 23,000 copies printed.

TOPIC TAGS: civil defense, chemical warfare, chemical warfare defense, lewisite, ClCN, phosgene, diphosgene, CO, adamsite, chloropicrin, chloroacetophenone, trichlortriethylamine, mustard gas, HCN

PURPOSE AND COVERAGE: The reader will find in this book the necessary information on the use of chemical warfare in the past and the state of its development at the present time. He will also obtain answers to his questions about how to protect himself from chemical warfare. The book undoubtedly is of interest not only for the serviceman, but also for each citizen of our Motherland, especially for members of DOSAAF. The sections of the book on the characteristics of poisons and methods of using them are written from the views of foreign armies.

TABLE OF CONTENTS [abridged]:

Card 1/2

STEPANOV, A.A.; POPOV, V.N.; CHUGASOV, A.A., podpolkovnik, red.; CHAPAYEVA, R.I., tekhn. red.

[Chemical warfare weapons and principles of antichemical defense] Khimicheskoe oruzhie i osnovy protivokhimicheskoi zashchity. Moskva, Voen. izd-vo M-va obor. SSSR, 1962. 123 p. (MIRA 15:5)

(Chemical warfare--Safety measures)

VUKALOVICH, M.P., prof., doktor tekhn. nauk; RASSKAZOV, D.S., kand. tekhn. nauk; POPOV, V.N., kand. tekhn. nauk; BABIKOV, Yu.M., inzh.

Heat properties of monoisopropyldiphenyl. Teploenergetika 11 no.6: 56-58 Je '64. (MIRA 18:7)

1. Moskovskiy energeticheskiy institut.

TSEDERBERG, N.V., doktor tekhn. nauk, prof.; POPOV, V.N., kand. tekhn. nauk; ANDREYEV, I.I., inzh.

Experimental study of the viscosity of hydrogen. Teploenergetika 12 no.4:84-86 Ap '65. (MIRA 18:5)

1. Moskovskiy energeticheskiy institut.

POPOV, V.N.; FADDEYEV, L.D.

An approach to the theory of a Bose gas at low temperatures. Zhur. eksp. i teor. fiz. 47 no.4:1315-1321 O '64. (MIRA 18:1)

1. Leningradskoye otdeleniye Matematicheskogo instituta imeni V.A. Steklova AN SSSR.

POPOV, V.N.

Green's functions and thermodynamic functions of a nonideal Bose-gas. Zhur. eksp. i teor. fiz. 47 no.5:1759-1764 N '64. (MIRA 18:2)

1. Leningradskiy gosudarstvennyy universitet.

L 51377-65 EWT(d)/T

ACCESSION NR: AP5010970 UR/0286/65/000/007/0154/0155

AUTHORS: Popov, V. N.; Kolesnikov, Ye. F.

TITLE: Clutch of a maximum moment. Class 47, No. 169951

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1965, 154-155

TOPIC TAGS: clutch, transmission, gear

ABSTRACT: This Author Certificate presents a clutch of a maximum moment, containing an immobile casing within which are contained the driven semiclutch and an engaging and a disengaging device (see Fig. 1 on the Enclosure). To improve the performance of the clutch, a toothing and a planetary transmission are installed in the driven semiclutch. The satellite gears are kinematically engaged with the solar ring and roll along the internal toothing, while the ring is rigidly connected to the drive shaft. In an alternate design the electric motor may be automatically disconnected from the working assembly by an arrangement of guides on the inside of the casing. The toothing rotates on rollers along these guides. In the third version, to simplify the construction and to utilize the reactive turning moment of the drive, the engaging and disengaging assembly of the clutch consists of a roller, a hinged rocking lever, and a spring. These are fixed to the immobile casing and are spaced symmetrically on the outside rim of the toothing. Orig. art. has: 1 figure.

Card 1/3

L 51377-65

ACCESSION NR: AP5010970

ASSOCIATION: Donetskiy mashinostroitel'nyy zavod im. 15-letiya LKSMU (Donets Machine Construction Plant)

SUBMITTED: 18Apr64 ENCL: 01 SUB CODE: IE

NO REF SOV: 000 OTHER: 000

Card 2/3

L 51377-65

ACCESSION NR: AP5010970

ENCLOSURE: 01

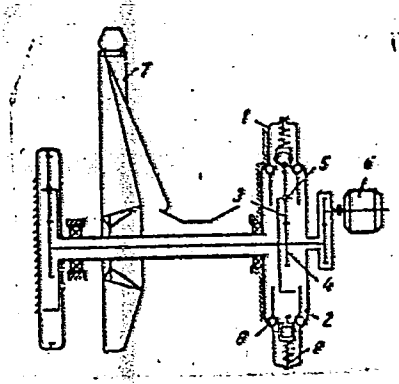


Fig. 1. 1- immobile casing of the clutch; 2- toothing; 3- satellites of the planetary transmission; 4- solar ring; 5- drive shaft; 6- electric motor; 7- ring of the working assembly; 8- rollers; 9- spring

Card 3/3

L 13054-65 EWT(d) Pg-4 IJP(c) MLK

ACCESSION NR: AT4047142 S/0000/64/000/000/0135/0148

AUTHOR: Gorbunov, A. D.(Moscow); Popov, V. N.(Moscow) B

TITLE: Adams-type methods for an approximate solution of the Cauchy problem for ordinary differential equations with delay 16

SOURCE: Chislenny*ye metody* resheniya differentsial'ny*kh i integral'ny*kh uravneniy i kvadraturny*ye formuly* (Numerical methods of solving differential and integral equations and quadrature formulas); sbornik statey. Moscow, Izd-vo Nauka, 1964, 135-148

TOPIC TAGS: Cauchy problem, generalized Adams formula, differential equation with delay, approximate method

ABSTRACT: This article deals with an approximate solution of the Cauchy problem

$$\frac{dy(x)}{dx} = f\left(x, y(x), y(x-\tau(x))\right)$$

$$y(x) = \phi_0(x)$$

Card 1/3

L 13054-65
ACCESSION NR: AT4047142

where f is a sufficiently smooth curve defined in a certain closed domain of three-dimensional space, $\tau(x)$ (delay) is a given positive and sufficiently smooth function, and $\phi_0(x)$ is a sufficiently smooth function defined on a certain set of initial values. It is pointed out that there is some possibility that the approximate solution $y(x)$ has weak discontinuities (discontinuities of the first kind of its derivative) and, therefore, "high accuracy" formulas of the Adams or Runge-Kutta type can not be applied directly to the solution of this problem, and certain modifications of these formulas are necessary. Formulas for interpolating a function with discontinuous derivatives are derived which serve as the basis for constructing generalized formulas of the Adams type, and the algorithm of their application to the solution of the given problem is presented. It is stressed that the method developed can also be applied to the solution of Cauchy lems for classical ordinary differential equations with discontinuous right hand sides, for the neutral type of equations, and for other analogous cases. The convergence of generalized methods of the Adams type is proved, and an estimate of the computation error is established The derived results are extended to a system of equations. The algorithms for solving the Cauchy problem for a system of equations

Card 2/3

L 13054-65
ACCESSION NR: AT4047142

with a delayed argument and for interpolating functions with discontinuous derivatives are written in ALGOL-60 language. Two numerical examples illustrate the integration procedure. Orig. art. has: 36 formulas.

ASSOCIATION: none

SUBMITTED: 20Apr63 ENCL: 00 SUB CODE: MA

NO REF SOV: 010 OTHER: 001 ATD PRESS: 3128

Card 3/3

L 10672-65 EWT(l) EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EWG(v)/EPR/T EWA(
Pe-5 Pr-4 Ps-4/Pt-10/Pu-4 ASD(d) WW WE

ACCESSION NR: AP4042485 S/0152/64/000/006/0055/0057

AUTHOR: Popov, V. N.; Tsederberg, N. V.; Morozova, N. A.

TITLE: An experimental study of the thermal conductivity of seven types of petroleum products

SOURCE: IVUZ. Neft't i gaz, no. 6, 1964, 55-57

TOPIC TAGS: petroleum fraction, thermal conductivity, desalted petroleum, benzine, kerosene, diesel oil, fuel oil, masut

ABSTRACT: Data on the chemical composition, thermal conductivity and other physical properties are tabulated for desalted petroleum, NK-140 benzine, TS-1 kerosene, atmospheric diesel oil (B. P. 202C), vacuum diesel oil (B. P. 213C), a broad fraction of the vacuum column (B. P. 280C) and masut (B. P. 225C), all obtained from the same source. As shown in Fig. 1 of the Enclosure, the thermal conductivity decreased linearly with increasing temperature (17.1-300C) and was highest for masut. Orig. art. has: 1 figure and 8 tables.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Institute)

SUBMITTED: 27Jan64 ENCL: 01 SUB CODE: FP

NO REF SOV: 002 OTHER: 001

Card 1/2

S/0096/64/000/006/0056/0058

ACCESSION NR: AP4037641

AUTHOR: Vukalovich, M. P. (Doctor of technical sciences, Professor); Rasskazov, D. S. (Candidate of technical sciences); Popov, V. N. (Candidate of technical sciences); Babikov, Yu. M. (Engineer)

TITLE: Thermophysical properties of monoisopropyldiphenyl

SOURCE: Teploenergetika, no. 6, 1964, 56-58

TOPIC TAGS: monoisopropyldiphenyl, Hagen Poiseuille equation, Vargaftik equation

ABSTRACT: The authors present the results of an experimental investigation of the density, thermal conductivity, heat capacity, and viscosity of monoisopropyldiphenyl. The density was determined by the pyncometric method at room temperature and by the piezometric method for a constant volume at t = 50-350C. From the experimental results the authors determined that the temperature dependence of the density is

$$\rho = 984.3 - 0.473t - 0.811 \cdot 10^{-3}t^2, \text{ kg/m}^3 \qquad (1)$$

Calculation and experiment agreed within 0.3%. Thermal conductivity was deter-

Card 1/3

mined at t = 30-230C. The experimental data are well described by the Vargaftik equation ("Teplofizicheskiye svoystva veshchestv," Gosenergoizdat, 1956.)

$$\lambda = B\rho^{4/3} \quad (2)$$

Calculation accuracy was within experimental error. Viscosity was computed according to the Hagen-Poiseuille equation

$$V = \frac{\pi \Delta p r^4 \tau}{8L\eta} \quad (3)$$

and was measured at t = 20-350C. Heat capacity was determined according to a formula obtained from the thermal balance of two calorimeters, and was measured at t = 38-212C. Experimental data are described by the following equation

$$c_p = 1.620 + 34.8 \cdot 10^{-4} t \quad (5)$$

ACCESSION NR: AP4037641

Discrepancy between calculation and experiment did not exceed 1.3%. All the above values agree within experimental error with those obtained by N. B. Vargaftik et al. ("Neft' i gaz" no. 7, 1963). Orig. art. has: 1 figure, 5 formulas, and 2 tables.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Institute)

SUBMITTED: 00 DATE ACQ: 22Jun64 ENCL: 00

SUB CODE: OC, TD NO REF SOV: 013 OTHER: 001

Card 3/3

L 8652-65 EWT(1)/EWP(m)/EWT(m)/EPF(c)/EPF(n)-2/EPR/T/EPA(bb)-2/FCS(k)/EWP(b)/EWA(1) Pd-4/Pr-4/Ps-4/Pu-4 AFTC(a)/ASD(d)/ASD(p)-3/AS(mp)-2/ASD(f)-2/ASD/AEDC(a)/SSD/ESD(t) JD/JW/JG

ACCESSION NR: AP4044527 S/0294/64/002/004/0599/0611

AUTHOR: Petukhov, B. S.; Popov, V. N.

TITLE: Theoretical calculation of heat transfer and friction resistance in a turbulent flow in a pipe of equilibrium dissociating hydrogen

SOURCE: Teplofizika vy*sokikh temperatur, v. 2, no. 4, 1964, 599-611

TOPIC TAGS: heat transfer, dissociation, turbulent flow, hydrogen dissociation, hydrogen oxygen mixture, equilibrium dissociation

ABSTRACT: A method is given for theoretical calculation of heat transfer and friction resistance in a turbulent flow of dissociating hydrogen in a pipe. It is assumed that the dissociation rate exceeds considerably the convective and diffusional mass transfer rates. In this case, chemical equilibrium is established in each point of the flow, and the composition of the mixture is a function of pressure and temperature only. In the case of equilibrium dissociation, the concentration profile in the flow may thus be defined without solving the diffusion equation. The heat transfer, friction resistance, and different

Card 1/4

L 8652-65

ACCESSION NR: AP4044527

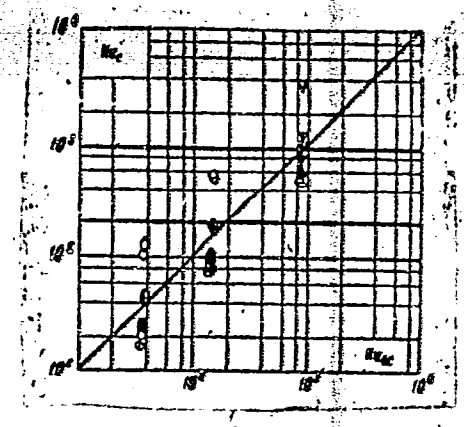
physical properties (specific enthalpy, specific heat, thermal conductivity, density, dynamic viscosity, and Prandtl number) were calculated at 1, 10, and 100 atm and 2000—5000K. Dissociation results in unique changes of physical properties as a function of pressure and temperature. The specific heat and the thermal conductivity change markedly with temperature and exhibit maxima. Fig. 1 of the Enclosure shows that owing to changes in physical properties caused by dissociation the heat transfer may change by 400%. Comparison of Fig. 1a and 1b shows that when the correction c_{pc}/c_p (c_p, specific heat at variable physical properties; c_p, average specific heat) is used, scattering of the data can be reduced from 380% to 30%. This signifies that the heat transfer is basically influenced by changes in the specific heat, and the effect of changes in viscosity and density on heat transfer does not exceed 30%. Orig. art. has: 40 formulas and 5 figures.

ASSOCIATION: none

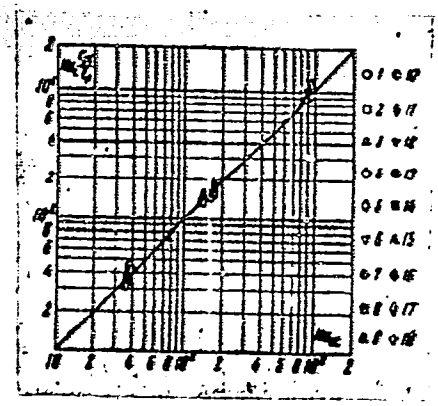
SUBMITTED: 15 May64	ATD PRESS: 3111	ENCL: 02
SUB CODE: FP	NO REF SOV: 002	OTHER: 013

Card 2/4

L 8052-65
ACCESSION NR: AP4044527 ENCLOSURE: 01



a



b

Card 3/4

L 8652-65

ACCESSION NR: AP4044527

ENCLOSURE: 02

P, atm	1		10		100	
T_0, °K / Re_0	1500	5000	1500	5000	1500	5000
$1.45 \cdot 10^4$	1	4	7	10	13	16
10^5	2	5	8	11	14	17
$9.99 \cdot 10^5$	3	6	9	12	15	18

Fig. 1. Influence of variable physical properties on heat transfer. (Nu_c and N_{oc} are Nusselt numbers at variable and constant physical properties at the same Reynolds and Prandtl numbers.)

Card 4/4

POPOV, V.M.; TOLSTENEV, N.I., MYSHKOVA, N.A.

Experimental investigation of the heat conductivity of seven petroleum-product samples. Izv. vys. zav.; neft' i gaz 7 no.6:83-88 '64. (MIRA 17:9)

1. Moskovskiy energeticheskiy institut.

L 13486-65 EWT(1) IJP(c)/SSD/AS(mp)-2/AFWL/ESD(gs)/ESD(t)
ACCESSION NR: AP4047899 S/0056/64/047/004/1315/1321

AUTHORS: Popov, V. N.; Faddeyev, L. D.

TITLE: Concerning one approach in the Bose gas theory at low temperatures

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 4, 1964, 1315-1321

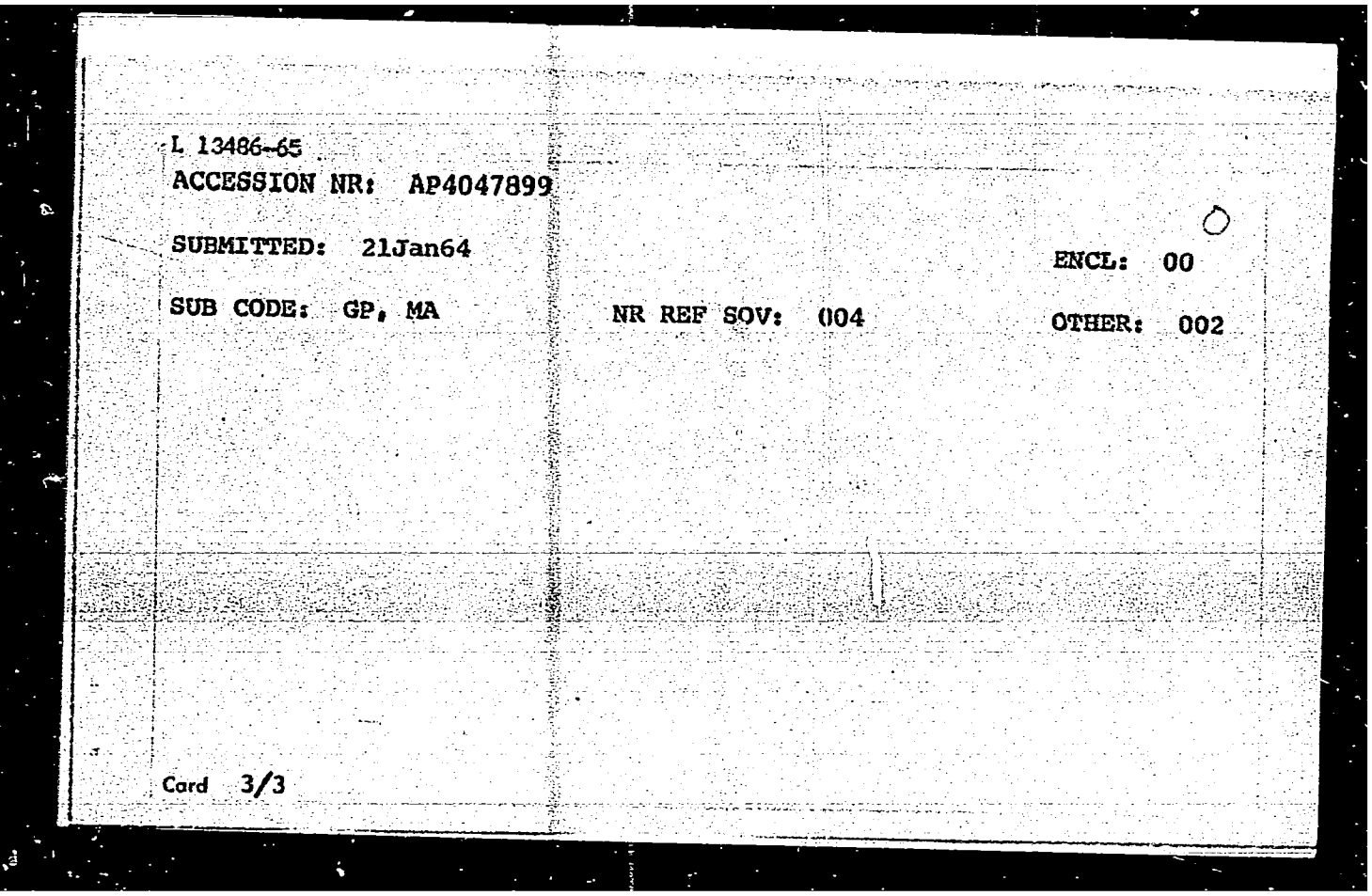
TOPIC TAGS: Bose Einstein gas, low temperature research, perturbation theory, annihilation, Green function, phonon

ABSTRACT: An approach is suggested for the theory of the Bose gas, believed to be more rigorous and simpler conceptually than the earlier treatments. The method is based on the premise that the existence of a condensate at low temperatures precludes the application of ordinary perturbation theory in which the unperturbed Hamiltonian is that of noninteracting particles, since in the ordinary theory

Card 1/3

the Green's function acquires nonphysical singularities when the temperature is reduced at fixed density. Consequently the authors start with a different unperturbed Hamiltonian which is made quadratic in the annihilation and creation operators by means of a specific canonical transformation. This perturbation theory is developed in diagram form, and the consequences of the resultant formalism is then discussed. In particular, it is shown how the phase transition associated with the appearance of the condensate shows up as the point where the canonical transformation degenerates into the identity transformation and the specially developed perturbation theory goes over into the usual one. The one-particle excitation spectrum is shown to have a phonon character below the transition temperature. Orig. art. has: 3 figures and 5 formulas.

ASSOCIATION: Leningradskoye otdeleniye Matematicheskogo instituta im. V. A. Steklova (Leningrad Division, Mathematics Institute, Academy of Sciences, SSSR)



L 13486-65
ACCESSION NR: AP4047899

SUBMITTED: 21Jan64 ENCL: 00

SUB CODE: GP, MA NR REF SOV: 004 OTHER: 002

Card 3/3

FOMIN, V.N.; TSEDERBERG, N.V.; MOROZOVA, N.A.

Experimental investigation of the heat conductivity of four petroleum products samples. Izv.vys.ucheb.zav.; neft' i gaz 7 no.4:71-74 '64. (MIRA 17:5)

1. Moskovskiy energeticheskiy institut.

POPOV, V.N. (Moskva)

Programming system in standard programs. Zhur. vych. mat. i mat.fiz. 4 no.1:189-192 Ja-F '64. (MIRA 17:6)

ACCESSION NO: AP4012005 S/0208/64/004/001/0078/0095

AUTHORS: Popov, V. N. (Moscow); Stepanov, V. A. (Moscow); Stisheva, A. G. (Moscow); Travnikova, N. A. (Moscow)

TITLE: Programming program

SOURCE: Zhurnal vy*chisl. matem. i matem. fiz., v. 4, no. 1, 1964, 78-95

TOPIC TAGS: programming, program, triple address machine, binary code, unconditional transmission, conditional transmission, manual programming, machine language

ABSTRACT: A programming program is set up for a triple-address machine with a nine-place binary code of operation and twelve-place addresses. The system of commands for the machine has all the basic arithmetic and logical operations and operations on commands. There are commands of unconditional transmission of control and commands of conditional transmission according to the sign worked out by the preceding command. The machine has a large external memory. Programming programs have been in use since October 1962. The time of programming is small; in the processing of one bit of information the time expenditure corresponds to 1000-2000 machine commands. Programs composed by a programming program are 1.5-2.5 times longer than

Card 1/3

ACCESSION NO: AP4012005

programs set up manually. The solution time for problems by programs composed by a programming program is 1.5-5 times greater than by programs composed manually. This relationship depends strongly on the quantity of cycles and variable addresses in them, and also on the quantity of procedures. The authors discuss the input language of a programming program, the history of programming programs, and transcoding of information. They construct a table of boundary of conditional addresses, treat preliminary processing of information and its translation into machine language, classification of procedures and formulation of procedure-schemes, and processing of information on blocks and variable addresses. The problem of programming operators is separated into two stages: regulation of the operations and their programming. Regulation of operations is reduced to separation of all syntactical units of the language into the sequences necessary for the program. Determination of the length of the program, construction of scales, and appropriation of true addresses are discussed. There are certain deficiencies in the programming program. It may have uneconomical formation of variable addresses. Now blocks are set up due to which these and other deficiencies are remedied. Included in a programming program is a block for processing variable addresses, linearly dependent on the parameter, with the help of commands of recovery and transaddress. With new processing of blocks an abstract of blocks is not set up, and the restriction on the quantity of blocks is

Card 2/3

Popov V.N.

AUTHOR: Popov, V.N. 89-10-34/36

TITLE: Review of the Book "Radiohydrogeology" by A.N. Tokarev, A.V. Shcherbakov, Geological State Publishing House. 1956, 262 pages, price Roubles 13,40 ("Radiogidrogeologiya", Tokarev, A.N., Shcherbakov A.V., Gosgeoltekhizdat, 1956, 262 stranits, tsena 13,40 Rub.)

PERIODICAL: Atomnaya Energiya, 1957, Vol. 3, Nr 10, pp. 376-377 (USSR)

ABSTRACT: This book is the first of its kind to be published in the Soviet Union. It consists of two parts. The first part contains three chapters: The first chapter discusses the causes of radioactive elements contained in water. The second chapter deals with the problem of various types of natural radioactive water. The third chapter is devoted to hydrogeological conditions which lead to the formation of uranium deposits. The second part consists of six chapters dealing with radiohydrogeological methods of investigation. The book contains both theoretical as also a large number of experimental data which were most suitable selected by the authors on the strength of their many years of experience. It is a drawback of this book that the text was not sufficiently well revised and corrected.

AVAILABLE: Library of Congress

Card 1/1

POPOV, V. N.

Popov, V. N. -- "Aspects of the Growth and Development of Apple Seedlings when Grown in Nurseries on Various Types of Stock." Min Higher Education USSR. Voronezh Agricultural Inst. Voronezh, 1956. (Disseration For the Degree of Candidate in Agricultural Sciences).

So: Knizhnaya Letopis', No. 11, 1956, pp 103-114

Popov V.N.

USSR / Cultivated Plants. Fruits, Berries L-6

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22823

Author : Popov, V.N.

Inst : Not Given

Title : Mother-seed Apple Tree Plantings.

Orig Pub : Sad i ogorod, 1956, No 7, 48-50

Abstract : The results of a study are stated on the effect of pollination in mother-seed gardens on the yield of apple seeds, their quality and vitality of wilding seedlings, conducted in the I.V. Michurin Scientific-Experimental Institute of Fruit Cultivation. The most successful ovary was obtained by dusting with a pollen mixture of local, stable varieties yielding large fruits.

Card : 1/1

POPOV, V.N.

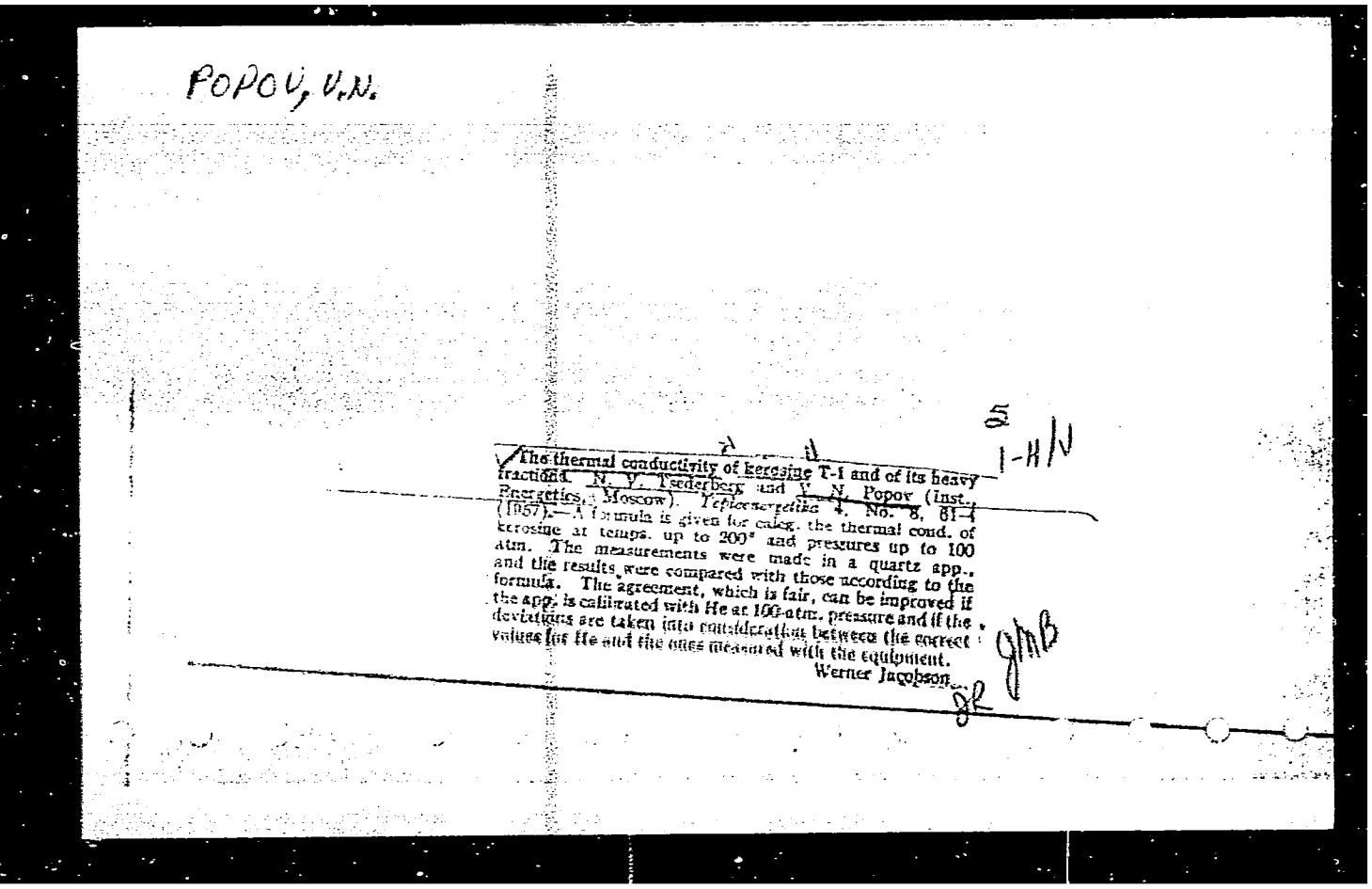
Effect of rootstock on the water cycle of grafted apple plants. Fiziol.rast. 3 no.1:66-72 Ja-F '56. (MLRA 9:5)

1. Nauchno-issledovatel'skiy institut plodovodstva imeni I.V. Michurina, Michurinsk.
(Apple)

POPOV, V.N., kand.sel'skokhoz.nauk

Apple trees for seed and the effect of various pollinizers and varieties used for grafting on the root system of stock. Dokl.Akad.sel'khoz. 24 no.12:13-17 '59. (MIRA 13:4)

1. Rossoshanskaya plodovo-yagodnaya opytnaya stantsiya. Predstavlena sektsiyey plodovodstva Vsesoyuznoy akademii sel'skogo khozyaystva imeni V.I.Lenina.
(Apple) (Roots(Botany))



POPOV, V.N.

The thermal conductivity of kerosine T-1 and of its heavy fractions. N. V. Tsederberg and V. N. Popov (Inst. Energetics, Moscow). *Teploenergetika* 4, No. 8, 81–4 (1957).—A formula is given for calcg. the thermal cond. of kerosine at temps. up to 200° and pressures up to 100 atm. The measurements were made in a quartz app., and the results were compared with those according to the formula. The agreement, which is fair, can be improved if the app. is calibrated with He at 100-atm. pressure and if the deviations are taken into consideration between the correct values for He and the ones measured with the equipment.

Werner Jacobson

POPOV, V.N., Cand Tech Sci—(diss) "Experimental study of thermo-physical properties of liquid fuels." Mos, 1953. 16 pp (Min of Higher Education USSR. Mos Order of Lenin Power Engineering Inst), 100 copies (KL,25-58, 114)

POPOV, V.N.; TSEDERBERG, N.V.

Experimental determination of the heat of vaporization of liquid fuels. Nauch. dokl. vys. shkoly; energ. no.1:161-168 '58.
(MIRA 11:10)

1.Rekomendovano kafedroy TOT Moskovskogo energeticheskogo instituta.
(Liquid fuels) (Heat of vaporization)

AUTHOR: Tsederberg, N.V. (Dr.Tech.Sci.) SOV/96-58-10-15/25
Popov, V.N. (Engineer)

TITLE: An experimental investigation of the thermal conductivity of helium. (Eksperimental'noye issledovaniye teploprovodnosti geliya)

PERIODICAL: Teploenergetika, 1958, No.10. (USSR) pp. 61-65

ABSTRACT: Published work on the thermal conductivity of helium is reviewed. experimental values over the pressure range of 1 - 212 kg/cm^2 have been published in only one work and relate to a temperature of 42.8°C. The most reliable data for the temperature range - 200 - + 600°C, at atmospheric pressure, are given in Table.1. The maximum error in these determinations is 1.83%. Determinations were made of the thermal conductivity of helium under pressure, using the hot-wire method in a glass measuring tube. At pressures up to 100 kg/cm^2 a steel bottle of helium was used, and at higher pressures a mercury compressor. The helium was 99.8% pure, the remaining 0.2% being nitrogen. The measuring tube was in thermostatically controlled water, glycerine or molten salts, according to the temperature. The apparatus is described, also the method of use and the way of working out the results. Correction for radiation from the wire and for the leads is explained. The main characteristics of the measuring tube are given in Table.2. The method of ageing is described. The equipment was checked by determining the thermal conductivity of air, comparing the results with those of other authors.

Card 1/2

An experimental investigation of the thermal conductivity of helium. SOV/96-58-10-15/25

Agreement was to within 0.5% of the most reliable values. Graphs of the thermal conductivity of helium as a function of temperature on the isobars of 1, 100, 200, 300, 400 and 500 kg/cm^2, and the results of controlled tests at 10 kg/cm^2, are given in Fig.3. The scatter of experimental points does not exceed 1%. Published data of other authors is included and agreement is good. The use of a logarithmic co-ordinate system is proposed and the experimental results are plotted in this system in Fig.4. Equation (2) accurately represents the thermal conductivity of helium under pressure. Calculated values of the thermal conductivity recommended for practical use are presented in Table.3. There are 4 figures, 3 tables and 7 Soviet references.

ASSOCIATION: Moscow Power Institute (Moskovskiy Energeticheskiy Institut)

Card 2/2

SOV/96-58-13/21

AUTHOR: Popov, V.N. Engineer
Tsederberg, N.V., Doctor of Technical Science

TITLE: The Thermal Conductivity of Liquid Fuels (Teploprovodnost' zhidkikh topliv)

PERIODICAL: Teploenergetika, 1958, Nr 11, pp 72-76 (USSR)

ABSTRACT: Existing work on the thermal conductivity of liquid fuel, mainly American and German, is briefly referred to. In Teploenergetika 1957, Nr 8, the present authors described work on the thermal conductivity of kerosene. The Predvoditelev-Vargaftik formula for calculating the thermal conductivity of pure normal liquids is given. In order to verify the validity of this formula for other materials, determinations

Card 1/5

The Thermal Conductivity of Liquid Fuels

were made of the thermal conductivity, density and specific heat for benzine B-70, diesel fuel No.3 with a specific gravity at 20°C of 0.848 and initial boiling point of 220°C, and winter diesel fuel No.4. with a specific gravity at 20°C of 0.850 kg/litre and initial boiling point of 190°C. The apparent molecular weights and viscosities of these fuels were determined by B.V. Samokhvalova and R.Z. Sulaymanova. The thermal conductivity of the fuel was determined by the use of four measuring tubes similar to those described in the previous work; the main characteristics of the tubes are given in Table 1. The thermal conductivity of benzine B-70 was investigated at a pressure of 10 atm over the temperature range +20-+110°C. The results are plotted in Fig.1. and recorded in Table 2. The thermal conductivities of diesel fuels Nos.3 and 4 were determined at 10 and 50 atm over the temperature range - 50 to + 250°C. The results for the former are given in Fig.2. and Table 3 and for the latter in Fig.3. and Table 4.

Card 2/5

The Thermal Conductivity of Liquid Fuels

The root mean square error of individual determinations of thermal conductivity is 1.3%. The relationship between the specific gravity and temperature of Fuel No.3. at various pressures is plotted in Fig.4. and tabulated in Table 5. Similar data for fuel No.4. are given in Fig.5. and Table 6. Table 7 gives the specific gravity of benzine B-70 at atmospheric pressure. The relationship between the specific heat and the temperature of fuel No.3. at constant pressure is given in Fig.6. and Table 8. Similar data for the fuel No.4. are given in Fig.7. and Table 9. Values of the specific heat of benzine No.B-70 are given in Table 10. It will be seen from Figs.Nos.6 and 7. that the pressure has no effect on the specific heat in the range of 1-50 atm. In order to verify the accuracy of the formulae of Cragoe (U.S. Bureau of Standards) and Predvoditelev-Vargaftik the thermal conductivities of benzine B-70 and the two diesel fuels were calculated by these

The Thermal Conductivity of Liquid Fuels

formulae and compared with the experimental results. It is concluded that Cragoe's formula is inaccurate and that the Predvoditelev-Vargaftik formula gives the absolute value of thermal conductivity of the fuel to within 10%. The apparent molecular weights of the fuels in question are given in Table 11 as determined by a cryoscopic method. Experimental results for the thermal conductivity as a function of temperature at atmospheric pressure for all the fuels investigated in the present work are plotted in Fig.8. which also gives data for kerosene T-1 and its heavy fractions. An empirical formula is offered for calculation of the thermal conductivity of fuels in the specific gravity range of 0.750 to 0.850 kg/litre. This formula gives results

The Thermal Conductivity of Liquid Fuels

accurate to within 4%; the only data required is the specific gravity of the fuel at 20°C. There are 8 figures, 11 tables and 5 Soviet references.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Institute)

Card 5/5

69205

S/096/60/000/06/018/025
E194/E284

24,5200

AUTHORS: Tsederberg, N. V., Doctor of Technical Sciences, Popov, V. N., Candidate of Technical Sciences, and Morozova, N. A., Engineer

TITLE: An Experimental Investigation of the Thermal Conductivity of Argon

PERIODICAL: Teploenergetika, 1960, Nr 6, pp 82-87 (USSR)

ABSTRACT: Previous experimental work on the thermal conductivity of argon is reviewed. Published values for the thermal conductivity of argon in the temperature range from -200 to +600°C at atmospheric pressure from a number of authors are plotted in Fig 1. Available experimental data for the thermal conductivity of argon in the temperature range from 300 to 1100°C at atmospheric pressure is plotted in Fig 2. It will be seen from -200 to +200°C there is good agreement between the results of all authors but there is increasing divergence at temperatures above 200°C. The thermal conductivity of monoatomic gases at atmospheric pressure may be calculated by expression (1) and the curve for argon for temperatures of 0 to 600°C constructed by means of this equation is plotted in Fig 1 and in general

Card 1/4

69205
S/096/60/000/06/018/025
E194/E284

An Experimental Investigation of the Thermal Conductivity of Argon

agreement is good. Values for the thermal conductivity is argon at atmospheric pressure over the temperature range of -200 to +600°C corresponding to the curve given in Fig 1 are presented in Table 1. Higher temperatures are not considered in the present article because of the great differences between the published results of various authors. The thermal conductivity of argon under pressure was studied by the hot wire method using two glass measuring tubes. The instrumentation and experimental procedure are described and the method of working out the results was the same as that used in determination of the thermal conductivity of helium described in an article by the same authors in Teploenergetika, 1958, Nr 10. The principal characteristics of the two measuring tubes used in the tests are given in Table 2. In checking the apparatus measurements were first made of the thermal conductivity of air and good agreement was obtained with published results as will be seen from the graph plotted in Fig 3. Graphs

An Experimental Investigation of the Thermal Conductivity of Argon.

of the thermal conductivity of argon as function of temperature on isobars ranging from 1 to 500 kg/cm^2 are plotted in Fig 4, in the majority of cases the scatter of experimental points did not exceed 2.5%. Values of thermal conductivity obtained by other authors are also plotted in Fig 4 and it will be seen that the present authors are in good agreement with some other published work. On the basis of available experimental data calculations were made of the specific gravity of argon over the temperature range from -90 to 1000°C and pressures from 100 to 500 kg/cm^2 and the results are given in Table 3. Table 4 gives values of the specific gravity of argon on the upper and lower boundary curves. Fig 5 gives the results of experimental data on thermal conductivity of argon under pressure obtained by various authors when plotted in terms of Eq (3), which is the empirical form of Eq (2) and it is concluded that this

Card 3/4

11.3100

S/096/60/000/010/012/022
E194/E135

AUTHORS: Tsederberg, N.V., Popov, V.N., and Morosova, N.A.

TITLE: Investigation of the Thermo-physical Properties of Helium in the Pressure Range 1 to 200 kg/cm^2 and the Temperature Range 0 to 600 °C.

PERIODICAL: Teploenergetika, 1960, No 10, p 95

TEXT: The experimental equipment is described. Equations are given relating the thermal conductivity and viscosity of helium with temperature and pressure, and tables of thermal-physical properties are given. The tabulated data of thermal conductivity and viscosity are determined on the basis of the authors' own experimental work and also published work.

ASSOCIATION: Moskovskiy energeticheskiy institut
(Moscow Power Institute)

Card 1/1

TSEDERBERG, nikolay Valerianovich; POPOV, Valentin Nikolayevich; MOROZOVA, Nadezhda Anisimovna; RASSKAZOV, D.S., red.; VORONIN, K.P., tekhn. red.

[Thermal and physical properties of helium] Teplofizicheskie svoistva geliia. Moskva, Gos. energ. izd-vo, 1961. 118 p. (MIRA 14:8)
(Helium)

43291

S/844/62/000/000/126/129
D444/D307

AUTHORS: Gudkov, B. S., Dzantiyev, B. G., Popov, V. N. and Rumyantsev, Yu. M.

TITLE: Experimental methods for radiation-chemical investigations on a nuclear reactor

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 733-737

TEXT: Among reactions suitable for effecting in a nuclear reactor to make use of the kinetic energy of the fission fragments is the fixation of nitrogen in the gas phase to form hydrocyanic acid, hydrazine and other compounds. The authors have studied such reactions using methane, ethylene or acetylene as the carbon-containing and nitrogen and ammonia as the nitrogen-containing components. An ИРТ-1000 (IRT-1000) reactor of 100 kv capacity was used by the Institut atomnoy energii AN SSSR (Atomic Energy Institute of the AS USSR) to study the reactions under flow conditions. The exit gases

Card 1/2

PETUKHOV, B.S.; POPOV, V.N.

Theoretical calculation of heat transfer and frictional resistance in the turbulent flow of an incompressible fluid of variable physical properties in pipes. Teplofiz. vys. temp. 1 no.1:85-101 Jl-Ag '63. (MIRA 16:10)

1. Moskovskiy energeticheskiy institut.

ACCESSION NR: AP4004139 S/0294/63/001/002/0191/0197

AUTHORS: Makavetskas, R. A.; Popov, V. N.; Tsederberg, N. V.

TITLE: Experimental determination of the viscosity of helium and nitrogen

SOURCE: Teplofizika vy*sokikh temperature, v. 1, no. 2, 1963, 191-197

TOPIC TAGS: dynamic viscosity, viscosity, helium, helium viscosity, nitrogen viscosity, gas analyzer, gas analysis, gas property, gas viscosity, nitrogen, helium nitrogen mixture

ABSTRACT: With an aim at filling the temperature gaps in the existing experimental data, the coefficient of dynamic viscosity of helium, nitrogen, and their mixture was investigated experimentally in the temperature range 10--660°C and in the pressure range from 1 to 600 kg/cm^2 using the method of Professor D. L. Timrot (Izv. VTI,

Card 1/2

ACCESSION NR: AP4004139

No. 3, 1940), which employs a capillary and an annular balance. The smoothed data obtained from several sets of isotherms agree with the experimental values within 2%. Orig. art. has: 3 figures, 5 formulas, and 3 tables.

ASSOCIATION: Moskowskiy energeticheskiy institut (Moscow Power Engineering Institute)

SUBMITTED: 03Jul63 DATE ACQ: 26Dec63 ENCL: 02

SUB CODE: AS, PH NO REF SOV: 004 OTHER: 006

Card 2/2

ACCESSION NR: AP4004144 S/0294/63/001/002/0228/0237

AUTHORS: Petukhov, B. S.; Popov, V. N.

TITLE: Theoretical calculation of heat transfer and friction resistance in laminar flow in pipe of incompressible fluid with variable physical properties

SOURCE: Teplofizika vy*sokikh temperatur, v. 1, no. 2, 1963, 228-237

TOPIC TAGS: heat transfer, laminar flow, coolant, air heat transfer, hydrogen heat transfer, MS-20 oil heat transfer, transformer oil heat transfer, hydraulic resistance, Nusselt number, incompressible fluid, fluid flow, incompressible flow

ABSTRACT: Although calculations of heat exchange and hydraulic resistance in laminar flow of liquids with variable physical properties in pipes are encountered in many branches of engineering, the existing theoretical papers are devoted only to limited aspects of the problem, and none contain an analytic expression for the heat transfer. The authors derive analytic expressions for the Nusselt number and the hydraulic resistance coefficient for laminar flow in

ACCESSION NR: AP4004144

a pipe, away from the inlet, for an incompressible liquid with arbitrary temperature variation of the physical properties. These analytic expressions are used to calculate the heat emission and the friction resistance for air, hydrogen, water, Ms-20 oil, and transformer oil. In the calculations for oil and water, the viscosity ratio μ_{wall}/μ_{liq} ranged from 0.16 to 51. The temperature factor T_{wall}/T_{liq} for air and hydrogen ranged from 0.4 to 1.75. Empirical equations are derived for the Nusselt number and the friction resistance. Orig. art. has: 3 figures, 14 formulas, and 1 table.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Engineering Institute)

SUBMITTED: 18Jul63 DATE ACQ: 26Dec63 ENCL: 00

SUB CODE: AI, PR NO REF SOV: 004 OTHER: 006

Card 2/2

ASNIN, Yakov Isaakovich; BUKHANTSEV, G.V., kand. tekhn. nauk, otv. red.; POPOV, V.N., red.; TROFIMENKO, A.S., tekhn. red.

[Thermal similarity, convective heat exchange and entropy] Teplovoe podobie, konvektivnyi teploobmen i entropiia. Izd-vo Khar'kovskogo gos. univ., 1962. 112 p. (MIRA 15:10)
(Heat--Transmission)

POPOV, V. N.

"Theoretical calculation of heat transfer and friction resistance for supercritical carbon dioxide."

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

Moscow Power Inst.

PETUKHOV, B.S.; POPOV, V.N.

Theoretical calculation of the heat transfer and frictional resistance in turbulent flow of equilibrium dissociating hydrogen. Teplofiz. vys. temp. 2 no.4:599-611 Jl-Ag '64. (MIRA 17:9)

1. Moskovskiy energeticheskiy institut.

L 38963-65 EWT(m)/EPF(c)/EER/EWP(t)/EWP(b) Pr-4/Ps-4 IJP(c)/RPL JD/WW/JW
ACCESSION NR: AP5006824 S/0096/65/000/004/0084/0086

AUTHORS: Tsederberg, N. V. (Doctor of technical sciences, Professor); Popov, V. N. (Candidate of technical sciences); Andreyev, I. I. (Engineer)

TITLE: Experimental investigation of viscosity of hydrogen

SOURCE: Teploenergetika, no. 4, 1965, 84-86

TOPIC TAGS: hydrogen, viscosity, viscosimeter, equation of state, compressibility, nitrogen

ABSTRACT: The viscosity of hydrogen was measured in the temperature range 15-715C and the pressure range 45-505 bars by means of a viscosimeter with a thermometer glass capillary tube, type 600, 472 mm in length and 0.2 mm in diameter. Temperature measurements were accurate to within 0.5C and pressure measurements to within 0.35 bars. The measurements were carried out by a relative method, and the instrument was calibrated against nitrogen whose viscosity and compressibility are quite accurately known. The maximum relative indeterminacy in viscosity was 3%, the largest single error coming from the calibration (0.75%). The viscosity was computed from the Hagen-Poiseuille relationship $\mu = A(\alpha + g)\varepsilon_1\varepsilon_2 \frac{z_1 T_c}{zT} - \delta\mu$, where g takes into

Card 1/2

L 38963-65
ACCESSION NR: AP5008824

account the weight unbalance and is an unknown in the experiment. The data were plotted on a log-log scale $\lg[(\mu-\mu_0)\cdot 10^4]$; $\lg\left(\frac{1}{v}\right)$, where v is the specific volume. A curve fit showed the semi-empirical equation $\mu=\mu_0+0.677t\left(\frac{1}{v}\right)^{1.5t^2}$ to hold true.

Because of the absence of experimental data on hydrogen compressibility above 400C, the following equation of state was used as input into the viscosity calculations $p\sigma=RT_{exp}[f_1(\omega)+f_2(\omega)\tau+f_3(\omega)\exp(-0.127\tau)+f_4(\omega)\exp(-1.905\tau)]$. Orig. art. has: 4 formulas and 1 figure.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Heat Power Institute)

SUBMITTED: 00 ENCL: 00 SUB CODE: ME, IC

NO REF SOV: 004 OTHER: 006

Card 2/2

ACC NR: AP6027579 SOURCE CODE: UR/0152/66/000/003/0085/0086

AUTHOR: Popov, V. N.; Tsederberg, N. V.; Morozova, M. A.

ORG: Moscow Institute of Energetics (Moskovskiy energeticheskiy institut)

TITLE: Experimental determination of heat capacity of liquid petroleum products

SOURCE: IVUZ. Neft' i gaz, no. 3, 1966, 80 and p. 86

TOPIC TAGS: HEAT CAPACITY, petroleum product, petroleum fuel, diesel fuel, lubricating oil / DS diesel fuel, TS-1 petroleum fuel, M-3 lubricating oil, AK-1 lubricating oil

ABSTRACT: The authors present the results of heat capacity tests performed on DS diesel fuel (density 0.837 g/cu cm), TS-1 fuel (0.786 g/ cu cm), M-3 lubricating oil (0.874 g/cu cm) and AK-1 lubricating oil (0.923 g/cu cm). A calorimeter with an adiabatic enclosure was used for tests at atmospheric pressure while for higher pressures an isometric enclosure was applied. The calorimeters were checked for the known capacities of toluene and water, as shown in two graphs. The results of tests at different temperatures are presented in two tables of which the first covers the tests performed at a pressure of 1 kg/sq cm and the second at 3 kg/sq cm. Orig. art. has: 2 graphs, 2 tables.

SUB CODE: 21 / SUBM DATE: 10Feb65

UDC: 665.5.:536.22.001.5

Card 1/1

POPOV, V.N.; TSEDERBERG, N.V.; MOROZOVA, N.A.

Experimental investigation of the thermophysical properties of petroleum products. Izv. vys. ucheb. zav.; neft' i gaz 8 no.1: 79-81 '65. (MIRA 18:2)

1. Moskovskiy energeticheskiy institut.

ACC NR: AR6036311 SOURCE CODE: UR/0273/66/000/009/0031/0031

AUTHOR: Popov, V. N.; Ashmarin, N. M.; Mazur, B. I.

TITLE: Boosting the performance of an internal-combustion tractor engine

SOURCE: Ref. zh. Dvigateli vnutrennogo sgoraniya, Abs. 9.39.208

REF SOURCE: Tr. Chelyab. in-ta mekhaniz. i elektrifik. s. kh., vyp. 24, 1965, 69-77

TOPIC TAGS: internal combustion engine, tractor, carburation, film carburation

ABSTRACT: The use of volumetric-film carburation (TsNIDI type combustion chamber) gas-turbine supercharge, increasing of the diameter by 7%, and raising operating speeds from 1050 to 1200 rpm makes it possible to raise the capacity of an internal-combustion tractor engine by 80%. The advantages of volumetric-film carburation with respect to economy in the case of gas-turbine supercharge are practically unchanged. The method adapted for boosting the tractor engine makes it possible to increase its per unit characteristics to a level of the best modern tractor engines. It is found to be economical and efficient in achieving good results within a short period of time and at minimum cost. [Translation of abstract]

Card 1/1 SUB CODE: 21/ UDC: 621.436 [NT]

ACC NR: AR6036310 SOURCE CODE: UR/0273/66/000/009/0031/0031

AUTHOR: Popov, V. N.; Ashmarin, N. M. -- Ashmarin, Yu. M.; Mazur, B. I.; Kochetkov, V. I.

TITLE: Effect of gas turbine supercharge on the pickup of an engine

SOURCE: Ref. zh. Dvigateli vnutrennogo sgoraniya, Abs. 9.39.207

REF SOURCE: Tr. Chelyab. in-ta mekhaniz. i elektrifik. s. kh., vyp. 24, 1965, 97-101

TOPIC TAGS: internal combustion engine, supercharger, supercharged engine, combustion chamber, diesel engine/DSP 11 diesel engine

ABSTRACT: Results are presented of comparative tests of the KDM-100 internal-combustion and the D-108 and D-130 diesel engines with TKR-11 turbo-compressor, manufactured by the Chelabinsk Tractor Plant. DSP-11 diesel oil with MNIIP-22K additive and GOST 305—58 diesel fuel were used for the engines tested. The temperature conditions was maintained at practically the same level for all engines and the oil and water temperatures at the engin's outlet were 70—76C and 75—85C,

Card 1/2 UDC: 621.436.001.4

ACC NR: AR6036310

respectively. The results of the tests obtained under identical conditions relative to the quality of lubricant and nearly equal moments in inertia of comparable engines, confirmed the following: replacement of the precombustion chamber on internal combustion tractor engines by a chamber in the piston TsNIDI type engine virtually did not induce changes in engine pickup. The pickup of the D-130 engine using the TKR-1 turbocompressor and the chamber in the piston type TsNIDI is equal to or slightly better than the pickup of the KDM-100 internal combustion engine. [Translation of abstract] [NT]

SUB CODE: 21/

Card 2/2

ACC NR: AP6033955 SOURCE CODE: UR/0294/66/004/005/0689/0697

AUTHOR: Popov, V. N.

ORG: Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut)

TITLE: Theoretical calculation of heat transfer and friction resistance for carbon dioxide in the supercritical region for laminar flow in a round tube

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 5, 1966, 689-697

TOPIC TAGS: carbon dioxide, gas flow, laminar flow, heat transfer, fluid friction

ABSTRACT: This is a continuation of earlier work by the author (Teplo- i massoperenos v. 1, Minsk, 1965) where heat transfer and friction resistance were calculated for carbon dioxide in the supercritical region for turbulent flow in tubes. The present paper is devoted to laminar flow. The author calculates the local heat transfer and friction resistance far from the entrance to the tube at constant heat flux density on the wall. The calculation procedure was described in another paper by the author (with B. S. Petukhov, Teplofizika vysokikh temperatur v. 1, no. 2, 1963). The calculations were made at pressure of 100 atm at 20 - 600C, both for heating and for cooling. The physical properties of carbon dioxide were taken from various published sources. Separate calculations are made for each temperature. Plots are obtained for the radiant distribution of the temperature, velocity, and mass velocity for the heat transfer as a function of the density ratio at the fluid and wall temperatures, and of the friction resistance as a function of the same ratio. Interpolation formulas are

Card 1/2

UDC: 536.24: 661.97

POPOV, V.I.

Principal [illegible] of the formation and distribution of [illegible] underground mineral waters in the Mongolian People's Republic. Vop. gidrogeol. i inzh. geol. no.16:3-11 '50. (MLR 12:11)
(Mongolia--Mineral waters)

POPOV, V.N.; KUTSEL', Ye.N.

Methods for compiling certain types of hydrochemical maps.
Vop. gidrogeol. i inzh. geol. no. 18:176-184 '59. (MIRA 14:5)
(Water, Underground—Maps)

POMOMAREV, Vasiliy Maksimovich; POPOV, V.N., doktor geol.-miner.nauk, otv.red.; LADYCHUK, L.P., red.izd-va; MEL'NIKOVA, N.B., red. izd-va; GOLUB', S.P., tekhn.red.

[Underground waters in regions with a thick layer of permafrost] Podzemnye vody territorii s moshchnoi tolshchei mnogoletnemerzlykh gornykh porod. Moskva, Izd-vo Akad.nauk SSSR, 1960. 198 p. (MIRA 13:12)
(Frozen ground) (Water, Underground)

RYABCHENKOV, A.S.; ANTONENKO, K.I.; TITOV, N.A.; CHAPOVSKIY, Ye.G.; CHURINOV, M.V.; KONOPLYANTSEV, A.Z.; VIKTOROV, S.V.; VOSTOKOVAYA, Ye.A.; SADOVSKIY, N.D.; KUDELIN, B.I.; OGIL'VI, N.A.; LUNGERSGAUZEN, G.F.; BRODSKIY, [illegible].A.; SECHERBAKOV, A.V.; POPOV, V.N.; YEMEL'YANOVA, [illegible].P.; SOKOLOV, S.S.; BERSENEV, I.I.; GROSHIN, S.I.; MAKKAVEYEV, A.A.; MARINOV, N.A.; YEFIMOV, A.I.; ASSOVSKIY, G.N.; VLADIMIROV, A.G.[deceased]; PROKHOROV, S.P.; FILIPPOVA, B.S., red. izd-va; BYKOVA, V.V., tekhn. red.

[Methodological manual on hydrogeological surveying at the scales of 1:1,000,000 - 1:500,000 and 1:200,000 - 1:100,000]Metodicheskoe rukovodstvo po gidrogeologicheskoi s"emke masshtabov 1:1000 000 - 1:5000 000 i 1:200 000 - 1:100000. Pod obshchei red. A.A.Makkaveeva i A.S.Riabchenkova. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol. i okhrane nedr, 1961. 318 p. (MIRA 15:3)

1. Russia (1923- U.S.S.R.) Ministerstvo geologii i okhrany nedr. (Water, Underground) (Geological surveys)

POPOV, V.N., glav. red.; MAKKAVEYEV, A.A., zam. glav. red.; PAVLOV, B.S., red.; RODIONOV, N.V., red.; SHCHERBAKOV, A.V., red.; NEMANOVA, G.F., red.izd-va; SHMAKOVA, T.M., tekhn. red.

[Methodological handbook for making hydrogeological surveys on 1:50,000 and 1:25,000 scales]Metodicheskoe rukovodstvo po proizvodstvu gidrogeologicheskoi s"emki v masshtabakh 1:50,000 i 25,000. Moskva, Gosgeoltekhizdat, 1962. 370 p. (MIRA 16:3)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i inzhenernoy geologii.
(Water, Underground--Maps)

S/169/63/000/002/070/127
D263/D307

AUTHORS: Popov, V. N. and Kutsel', Ye. N.

TITLE: Formation of background and anomalous concentrations of radon in underground waters and their mineral value

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 10, abstract 2D63 (Sov. geologiya, 1962, no. 4, 93-99)

TEXT: Background concentrations of radon in the underground waters of many lithological complexes of non-ore-bearing rocks are characterized by varying but fairly close values, not exceeding 36 emans. Background contents of radon in waters underlying zones of tectonic disturbances in acid magmatic rocks may reach 75-100 emans. In areas of deposits or ore exposures of uranium, and also in rocks containing radioactive elements in a dispersed state, the underground waters contain anomalous concentrations of radon. The authors recommend that during investigations concentrations to be regarded as anomalous are (a) in excess of 100 emans for a background of up to 36 emans, (b) in excess of 75 emans for a background of up to

Card 1/2

Formation of background ...

20 emans, and (c) in excess of 50 emans for a background of up to 10 emans. Maximum radon contents in underground waters circulating in regions of hydrothermal deposits may reach 200,000 emans. For sedimentary deposits under oxidative conditions, concentration of radon in water is generally not greater than 10,000 emans; in the reduction zone it is not more than 3,000 emans. Radon anomalies connected with deposits or ore exposures of uranium are accompanied by anomalous radon and uranium concentrations in the waters. Accurate investigations of the nature of radon anomalies should be carried out with due consideration of geological, tectonic and hydrodynamic conditions of the region. [Abstracter's note: Complete translation.]

Card 2/2

ACC NR: AP6029778 SOURCE CODE: UR/0294/66/004/004/0531/0539

AUTHOR: Popov, V. N.; Petukhov, B. S.

ORG: Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut)

TITLE: Theoretical calculation of heat transfer and resistance in laminar pipe flow of hydrogen dissociated in equilibrium

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 4, 1966, 531-539

TOPIC TAGS: heat exchanger, hydrogen, ~~propulsion~~ laminar flow, pipe flow

ABSTRACT: In high-temperature heat exchangers, the viscosity of the gas becomes so high that a laminar flow regime is frequently established. Therefore, a theoretical study was made of the local heat transfer coefficients and the flow resistance during laminar pipe flow of dissociated hydrogen. The heat flux through the wall was assumed to be constant. The results calculated for pressures of 1, 10, and 100 atm at 2000—5000K are presented in graphs. Orig. art. has: 5 formulas and 8 figures. [PV]

SUB CODE: 21/ SUBM DATE: 27Oct65/ ORIG REF: 002/ OTH REF: 003 ATD Press 5065

Card 1/1

UDC: 536.24.01.532.542.2

L 41738-66 EWT(1)/EWT(m)/T IJP(c)

ACC NR: AP6020210 SOURCE CODE: UR/0056/66/050/006/1550/1558

39
38

AUTHOR: Popov, V. N.

ORG: Mathematics Institute im. V. A. Steklov, Academy of Sciences SSSR, Leningrad Division (Matematicheskiy institut Akademii nauk SSSR Leningradskoye otdeleniye)

TITLE: Contribution to the theory of a Bose gas produced by bound states of Fermi particles

SOURCE: Zh eksper i teor fiz, v. 50, no. 6, 1966, 1550-1558

TOPIC TAGS: boson, fermion, quantum statistics, Green function, thermodynamic function

ABSTRACT: The purpose of this paper was to obtain an exact solution within the limits of low density of a model problem in many-particle theory, consisting of a number of Fermi particles interacting via a paired short-range potential. It is shown that in order for such a system to be of low density it is necessary that the chemical potential be negative, making this system different from similar systems analyzed by quantum-mechanical means. It is shown that such a Fermi system behaves like a Bose gas of molecules - bound states - and that at sufficiently low temperatures the bound pairs can form a Bose condensate. A preliminary calculation is made first at T = 0 using a variational principle based on the Bogolyubov transformation. This is followed by the derivation of expressions for the single-particle Green's functions (normal and anomalous) at T = 0, which are accurate in the low-density

Card 1/2

Card 2/2 90

L 33672-66 EWT(d)/EWT(l) IJP(c) WW
ACC NR: AP6014074 SOURCE CODE: UR/0294/66/004/002/0261/0266

43

AUTHOR: Popov, V. N. B

ORG: Moscow Power Institute (Moskovskiy energeticheskiy institut)

TITLE: Distortion of the temperature field in the region where a thermocouple is fixed

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 2, 1966, 261-266

TOPIC TAGS: temperature distribution, heat conductivity

ABSTRACT: The article presents an analytical solution of the problem of the distortion of the temperature field in the region where a thermocouple is fixed; this distortion is caused by a difference in the heat conductivity of the thermocouple, or of the material filling the groove for fixing the thermocouple, and the heat conductivity of the body whose temperature is being measured. (See Fig. 1). The statement of the problem is as follows. In a semi-infinite mass with a heat conductivity λ_{II} (Region II on Figure 1) there is an insertion in the form of an infinitely long cylinder with radius a (Region I in Figure 1) and a heat conductivity of λ_{I}. The solution of the problem was carried out under the following boundary conditions: on the outer surface of the mass ($y = \delta$) the temperature is constant and is equal

UDC: 536.532.088

Card 1/3

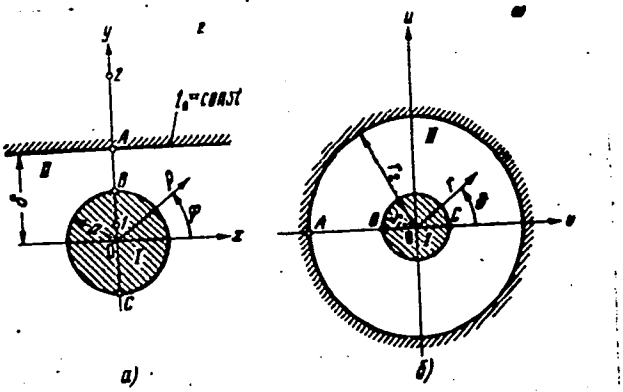


Figure 1. Formulation of the problem and conformal reflections of regions I and II from plane z on plane ω.

to t_0; at an infinite distance from Region I the temperature varies linearly as a function of the coordinate y, that is:

$$t = t_0 \quad \text{at} \quad \rho = \delta/\sin\varphi,$$

$$t = t^* = t_0 + \frac{q_0}{\lambda_{II}}(\delta - y) = t_0 + \frac{q_0}{\lambda_{II}}(\delta - \rho\sin\varphi) \quad \text{at} \quad \rho \to \infty, \quad (1)$$

Card 2/3

POPOV, V.N., kand. tekhn. nauk; GUSYATNIKOV, V.A., inzh.

Results of the studies of the D-130 engine at unsteady load. Trakt. i sel'khozmash. no.7:11-13 Jl '64. (MIRA 18:7)

1. Chelyabinskiy traktornyy zavod (for Popov). 2. Chelyabinskiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (for Gusyatnikov).

GORBUNOV, A.D. (Moskva); POPOV, V.N. (Moskva)

Adams type methods for approximate solution of the Cauchy problem for ordinary differential equations with retardation. Zhur. vych. mat. i mat. fiz. 4 no.4(suppl.):135-148 '64.

(MIRA 18:2)

MAKAVETSKAS, R.A.; POPOV, V.N.; TSEDERBERG, N.V.

Experimental study of the viscosity of mixtures of nitrogen and helium. Teplofiz. vys. temp. 1 no.3:348-355 N-D '63. (MIRA 17:3)

1. Moskovskiy energeticheskiy institut.