

ELOVICH, S. YU.

*C* Kinetics of diffusion for complex reactions and catalytic hydrogenation in the liquid phase. S. Yu. Elovich. *Problemy Kinetiki i Kataliza, Akad. Nauk SSSR, Ser. Khim. Geterogennyi Kataliz* 373-403(1949).--The reactions of catalytic hydrogenation in the liquid phase are analyzed as complex reactions consisting of several individual steps. The kinetics of these reactions and the effect of temp., catalyst, etc. are studied.

J. Rovtar Leach

*76 Jan*

ELOVICH, S. YD.

Use of complex-forming radiochromatography for analytical determination of metals. S. Yu. Elovich and S. N. Matorina. *Primenenie Khimicheskikh Elementov v Anal. Khim. Akad. Nauk S.S.S.R., Inst. Geokhim. i Anal. Khim.*, 1935, 83-97.-- In this investigation  $Fe^{3+}$  and  $Co^{2+}$  were used as indicators. The org. II cationite used was SM-12. By working with various concns. of  $Fe^{3+}$  and  $Co^{2+}$  it was detd. that the exchange consts. for these ions were 1.46 and 1.11, resp. The adsorbability was too close for effective separation. Next the oxalic and citric complexes of Fe and Co were studied, and their adsorbability on SM-12 at various pH detd. The distribution coeffs. of Fe and Co in 0.02% oxalic acid at pH 1.10-2.80 were too close for effective separation in approx. 5% citric acid at pH 2.10-2.20 it was sufficient for good results.-- At higher pH in oxalic acid the metals were wholly combined in complexes which were not adsorbed on the cationite. The cationite SM-12 reduced  $Fe^{3+}$  to  $Fe^{2+}$ . Therefore after the soln. contg. Fe and Co was passed through the column it was followed by 80 ml. of 0.5%  $H_2O_2$  to oxidize the  $Fe^{2+}$ . The adsorbed Fe was then washed out with a 1.67% citric acid soln. of pH 2.50 and the Co was washed with citric acid at pH 5.0. M. Hirsch

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MH

Elovich, S. Yu.

Selectivity and radical exchange in catalytic hydrogenation  
of fats. S. Yu. Elovich. *Kataliticheskie Gidrirovaniya i*  
*Oksidatsii, Akad. Nauk Kazakh S.S.R., Trudy Kazh. 1955,*  
*201-17.* Hydrogenation of the unsatd. linkages of cotton-  
 seed oil is attended with interesterification among the various  
 triglycerides. With active Ni catalysts at elevated temp.  
 the product approaches randomness of the various acyl  
 radicals in the glycerides; the initial location of radicals  
 on terminal or middle C atoms of the glycerol unit does not  
 affect the redistribution. Calcus. for glyceride compn.  
 according to Hilditch and Saleure (cf. *C.A.* 26, 1462)  
 are shown graphically. The experimentally detd. compn.  
 agrees with the compn. as calcd. assuming random distribu-  
 tion of the acyl radicals. G. M. Kosolapoff

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Elovich, S. Yu.

Electron-microscopic study of nickel catalysts for fat hydrogenation. S. Yu. Elovich and I. I. Tret'yakov. *Kataliticheskoe Gidrogenirovaniye i Oksidatsiya*, Akad. Nauk SSSR, Ser. Khim. Nauk, 1955, 218. *Chemical Catalysis*, Vol. 1, p. 115. *Chemical Catalysis*, Vol. 1, p. 115.

Non catalyst samples were examined electron microscopically and illustrated. The Ni-Cu catalyst, suspended and dispersed in the fat, is washed with  $CH_2Cl_2$  and suspended in  $AmOAc$  containing a little colloidal silica; a drop of the suspension is placed on  $H_2O$  and the resulting colloidal film containing the dispersed catalyst is mounted for the electron microscope. The most common particle size in this catalyst is about  $1\mu$ , with the metal coating the diatomite carrier like a sheath. Distribution curves of particle size are presented, and no substantial difference is found between specimens which had been used 4 hrs. and 0.5 hrs., resp. Isotherms for  $C_{18}H_{36}$  at  $-78^\circ$  were detd. for typical samples; these have an S-shape indicating a porous structure of the catalysts. The specimen carried on diatomite showed a much larger available active surface than one without a carrier support (10 sq. m. per g. against 2).

G. M. Kosolapoff

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SCOVICH, S. YU

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graphs presented on two and three... in the  
to 10<sup>-1</sup> concentration range. Records of ions moving in

ELOZO, V.P.

Work practice of Maykain medical sanitary units in the prevention of industrial accidents. Zdrav.Kazakh. 16 no.9:3-6 '56. (MLRA 10:1)

1. Zaveduyushchiy travmatologicheskim otdeleniyem Maykainskoy poselkovoy bol'nitsy Pavlodarskoy oblasti (nachal'nik medsan-chasti V.Rokovanov)  
(MAYKAIN--INDUSTRIAL SAFETY)

ELOZO, V.P.; MAKAROVA, M.I., *meditsinskaya sestra* (Krasnodar)

Role of the nurse in the preparation and conduction of endotracheal  
anesthesia with controlled respiration. *Med. sestra* 22. no.1:53-55  
Ja '63. (MIRA 16:7)

(INTRATRACHEAL ANESTHESIA)



BLOTT, V. J.

Hemoglobinuria of the dog. *Ann. N.Y. Acad. Sci.* 9: 516-517. (1954)

NEYMARK, I.I. (Barnaul); SHVIND, G.N. (Chelyabinsk); ZHUK, Ye.A.; KONOVALOV, Ye.D. (Novosibirsk); SAVEL'YEV, V.I.; LYADOV, Yu.S. (Yaroslavl'); KARAPETYAN, E.T. (Yerevan); FISHER, E.F. (Tomsk); TSINTSADZE, A.N. (Tbilisi); GOLOMAZOV, M.F. (Ternopol'); ELOZO, V.P. (Krasnodar); FEOFILOV, G.L. ; MUKHIN, Ye.P. (Novosibirsk)

Abstracts. Grud. khir. 6 no.2:113-119 Mr-Ap '64.

(MIRA 18:4)

IVENSKIY, Yu.N., inzh.; TULLER, A.G., inzh.; EL'PER, G.L., inzh.

Elements of computing circuits in the control of continuous lines.  
Vest. elektroprom. 33 no.3:61-66 Mr '62. (MIRA 15:3)  
(Automatic control)

IVENSKIY, Yu.N.; TULLER, A.G.; EL'PER, G.L.

Selecting current-supply sources for control circuits with  
wire communication equipment. Stan.i instr. 33 no.5:24-26  
My '62. (MIRA 15:5)

(Electronic control)

IVENSKIY, Yu.N.; TULLER, A.G.; EL'FER, G.L.

Protection systems for control circuits and supply sources. Stand  
instr. 33 no.7:5-9 J1 '62. (MIRA 15:7)  
(Electric protection)

IVENSKIY, Yu.N.; TULLER, A.G.; EL'PER, G.L.

Counting circuits in the control of machine tools and automatic  
lines. Stan. i instr. 34 no.11:7-10 N '63. (MIRA 16:12)

EL'PERIN, I.P.

First All-Union Conference on Heat and Mass Transfer. Inzh.fiz.  
zhur. 4 no.7:124-127 JI '61. (MIRA 14:8)  
(Heat—Transmission—Congresses) (Mass transfer—Congresses)

SOV/124-58-5-5241

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 41 (USSR)

AUTHOR: El'perin, I.S.

TITLE: Reducing the Diameter of the Centrifugal Compressors Used to Supercharge Portable Diesels (Umen'sheniye radial'nykh razmerov tsentrobezhnykh kompressorov, primenyayemykh dlya nadduva transportnykh dizeley)

PERIODICAL: Tr. N.-i. labor. dvigateley M-va transp. mashinostr. SSSR, 1957, Nr 3, pp 65-87

ABSTRACT: The relationship between the air-discharge constant and the diametral dimension of the compressor rotor is investigated. According to the author's calculations, the total relative losses in a compressor are at their minimum when the air-discharge constant is of the order of 0.28-0.4. Hence, at peripheral velocities of 300-400 m/sec an increase beyond the value customarily used for the air-discharge constant (of the order of 0.3 to 0.4) will be accompanied by a 10-12% decrease in the rotor diameter, without loss of compressor efficiency.

A.I. Loshkarev

Card 1/1

1. Centrifugal compressors--Design
2. Centrifugal compressors--Performance



EL'PERIN, I. T.

Methodical seminar on over-all utilization of peat as fuel.  
Inzh-fiz.sbur. no.1:124 Ja '59. (MIRA 12:1)  
(Peat)

EL'PERIN, I.T.

Method of combating knocking in internal carburetor-type combustion engines; combustion stabilizer. Trudy Inst. energ. AN BSSR no.9:116-129 '59.

(MIRA 13:10)

(Gas and oil engines)

VARANKIN, Yu.V.; ML'PERIN, I.T.

Production of water gas in engineering and power systems  
using milled peat. Trudy Inst.energ.AM BSSR no.10:37-45  
'59. (MIRA 13:6)  
(Peat) (Water gas)

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S/112/60/000/016/002/003

A005/A001

26.2252

Translation from: Referativnyy zhurnal, Elektrotehnika, 1960, No. 16, pp. 5-6,  
# 2.10844

AUTHOR: El'perin, I. T.

TITLE: On a Rational Method for Estimating the Use of the Heat Potential  
in Heat Exchange Processes

PERIODICAL: Tr. in-ta energ. AN BSSR, 1959, No. 10, pp. 64-72

TEXT: The author mentions that the operation of heat exchange devices involved in the schemes of power engineering and power-technologic units is estimated by quantitative criteria: the efficiency  $\eta = \frac{Q_n}{Q_p}$  and the coefficient of heat retention  $\epsilon = \frac{Q_n}{Q_n + Q_c}$  ( $Q_n$  is the heat received by the heated body,  $Q_p$  is the heat disposable in the warming body, and  $Q_c$  is the heat emitted into the surrounding medium). Hereat the utilization of the heat potential in them is not taken into account. It is assumed that the entropy coefficient, which can be applied to arbitrary heat utilization schemes, is simple, obvious, and independent of the nomical temperature of the surrounding medium;

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84564

S/112/60/000/016/002/003  
A005/A001

On a Rational Method for Estimating the Use of the Heat Potential in Heat Exchange Processes

$$\eta_{en} = \frac{\Delta S_w}{\Delta S_h}$$

( $\Delta S_w$  and  $\Delta S_h$  are the changes in the entropy of the warming and heated heat carrier respectively in the heat exchange device). This coefficient varies in the limits from 0 (maximum energy degradation in the process) to 1 (ideal reversible process). For heat exchange processes involved in the scheme of a thermodynamic cycle, the energetic coefficient must be used which was proposed by M. D. Mikheyev. The formula of the transition from the entropy coefficient to the energetic coefficient is presented.

M. N. N.

ABSTRACTOR'S NOTE: Subscript en (energy), w (warming), and h (heated) are translations of the original en (energiya), g (greyushchiy), and n (nagrevayemyy)

Translator's note: This is the full translation of the original Russian abstract

Card 2/2

24.5200

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AUTHOR:

El'perin, I. T.

S/170/59/002/11/021/024  
B014/B014

TITLE:

A Method for Intensifying Heat Exchange

PERIODICAL:

Inzhenerno-fizicheskiy zhurnal, 1959, Vol 2, Nr 11, pp 123-124 (USSR)

ABSTRACT:

The low heat-exchange intensity between gaseous and solid media in various technical processes renders various devices unnecessarily large and complicated, and reduces their performance. The Institut energetiki AN BSSR (Institute of Power Engineering of the AS BSSR) devised a method used to intensify such processes. It does not require a large power consumption or complicated equipment, and the solid need not be dispersed. Its principle is that a liquid heat carrier is injected between the gaseous heat carrier and the solid to be heated. The intensification of heat exchange between the gas and the solid over the fine-disperse liquid surface is discussed. The demands made on liquid heat carriers in the temperature range 200°C - 1600°C are summarized, and it is pointed out that salts are particularly suited for these purposes. A more detailed description of the method described in this article is given in Nr 11

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A Method for Intensifying Heat Exchange

68773

S/170/59/002/11/021/024  
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of the Trudy Instituta energetiki AN BSSR (Publications of the  
Institute of Power Engineering of the AS BSSR).

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Card 2/2

EL'FERIN, I. T.

Second methodical seminar on the utilization of peat for power  
engineering in process industries. Inzh.fiz.zhur. no.4:145-146  
Ap '60. (MIRA 13:8)

(Peat) (Power engineering)



S/262/62/000/004/007/024  
I014/I252

AUTHOR: El'perin, J. T.

TITLE: Heat exchanger for low-power gas turbine installation

PERIODICAL: Referativnyy zhurnal, Silovyye ustanovki, no. 4, 1962, 35, abstract 42.4.215. "Tr. In-ta energ". AN BSSR, 1960, no. 11, 51-57

TEXT: Research results are reported regarding the optimal design of a heat exchanger for a low-power gas turbine installation. The method of experimentation is described. Research was carried out by heating the surface of heat exchanger elements by means of electric heaters and cooling by means of water. A study of models of three variants of lamellar heat exchangers yielded the optimum heating surface, made of pressed semi-spherical lobes (5 mm diameter and 2.5 mm height) arranged in a checker-board pattern, with 8 mm spacing in both directions. For the variant chosen, the heat exchange equation was obtained in the  $Re = 2500-9000$  range.  $Nu_f = 0.11 Re_f^{0.616}$  was compared with smooth lamellar heat exchangers, the use of plates with pressed noses leads to a marked increase (1.4-1.7 times) in heat exchange intensity. There are 2 figures.

[Abstracter's note: Complete translation.]

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S/262/62/000/002/002/017  
1008/1208

AUTHOR: El'perin, I.T.

TITLE: A method of increasing heat-exchange

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 42.Silovyye ustanovki, no. 2, 1962. 27. abstract 42.2.166. "Tr. In-ta energ. AN BSSR", no. 11, 1960, 58-70

TEXT: For increasing the heat exchange between a gaseous heat-carrier and a solid body an intermediate liquid heat-carrier at high temperature which absorbs the heat from the gas in a heat-exchanger is introduced. For this purpose a fine spray of the liquid heat-carrier counterflows the stream of gas, or the gases are injected into the liquid heat-carrier. The efficiency of the method is evaluated. ✓

[Abstracter's note: Complete translation.]

Card 1/1

EL'PERIN, I. T.

"Investigation of Transfer Process in Contra-Streams."

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

S/170/61/004/001/020/020  
B019/B056

AUTHOR: El'nerin, I. T.

TITLE: The Problem of the Terminology of Heat- and Mass Exchange

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1961, Vol. 4, No. 1,  
pp. 131-148

TEXT: After an introductory discussion of the inexact terminology at present used in the field of heat transfer, the author gives definitions of 93 terms in a table. The respective term, its definition, its symbol and its English and German translation are given. When compiling this terminology, the author proceeded from the following considerations:

- 1) Only such terms are mentioned here, as have hitherto no fixed name.
- 2) Special attention was paid to the analogous structure of the terms and sufficient brevity.
- 3) In selecting the terms, the introduction into literature and practice were taken into account.
- 4) No parallel definitions or synonyms were used.
- 5) Special stress was laid upon exactitude and utility of the definitions.
- 6) The terminologies of related disciplines were used. There are 1 table and 14 Soviet references.

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EL'PERIN, I.T.

Heat and mass transfer in opposing currents. Inzh.-fiz. zhur.  
4 no. 5:62-68 My '61. (MIRA 14:5)

1. Institut energetiki AN BSSR, Minsk.  
(Mass transfer) (Heat-Transmission) (Fluid dynamics)

*Inst Heat + Mass Transfer*

26.5200

25552

S/170/61/004/008/002/016  
B116/B212

AUTHOR: El'perin, I. T.

TITLE: Heat exchange of a two-phase flow with a cluster of pipes

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 8, 1961, 30-35

TEXT: The present paper publishes the results of a preliminary investigation of a method used to intensify convective heat exchange from a gas to the heating surface by introducing a well diffused, liquid, intermediate heat carrier into the gaseous medium. The results of the experimental studies are also given with respect to aerodynamic and heat-exchange properties of a two-phase, gaseous-liquid heat carrier. At first, a reason for the method is given. It is shown that a very effective intensification of heat exchange can be reached if the density and viscosity of the heat carrier, and also the coefficients of molecular conduction and entropy are not too high in the flow core, while density, viscosity, conduction, and entropy of the medium in the boundary layer increase considerably. These conditions are fulfilled by a two-phase heat carrier consisting of a gaseous carrier medium with well dispersed, suspended drops of a nonvolatile liquid. The

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Heat exchange of a two-phase ...

25552

S/170/61/004/008/002/016  
B116/B212

two-phase flow covers the heating surface; the drops of the liquid heat carrier are sprayed onto the heating surface and kept there; they form the liquid boundary layer, which is continuously blown off by the gas and renewed by keeping new drops of the liquid. The heat exchange is explained with the help of Fig. 1. The well dispersed, liquid, intermediate heat carrier is introduced into the heating gas. A large heating surface and direct contact with the gas raise the intensive heating of the drops of the intermediate heat carrier. The liquid heat carrier now reaches the heating surface where it forms a continuously renewing boundary layer, and the stored heat is transferred to the heating surface. For a stable operation the two-phase gaseous-liquid medium has to be established continuously. It is practical to divide the heat exchanger with the liquid intermediate heat carrier into several sections. It is possible to use various liquid intermediate heat carriers in different temperature zones. For the purpose of finding the effectiveness of heat exchange with a two-phase heat carrier, investigations have been made on a heat-exchanger model having horizontal clusters of pipes. Water served as a liquid intermediate heat carrier. The temperature of the two-phase medium was  $\approx 30 \pm 35^{\circ}\text{C}$  and that of the transformer oil  $\approx 70^{\circ}\text{C}$ . The results of aerodynamic studies with a one-phase

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Heat exchange of a two-phase .25552

S/170/61/004/008/002/016  
B116/B212

flow were used in the form of  $Eu = f(Re)$  (5). For the two-phase flow, the approximate expression  $Eu_{two-phase}/Eu_{one-phase} = 1 + 0.275 q$  (6) was used, where  $q$  denotes the weight concentration of the intermediate heat carrier. The test data can be approximated by

$Nu_{two-phase}/ARe^n = 1 + Kq$  (9) for a two-phase flow, where  $A$  and  $n$  denote constants which depend on concrete heat exchange conditions;  $K$  denotes the proportionality factor and is a function of the type of intermediate heat carrier and the type of pipe cluster. Tests confirmed the usefulness of applying liquid intermediate heat carriers for intensifying the heat exchange between a gaseous heat carrier and the heating surface. A two-phase medium is a more effective heat carrier than each single component of it. The effectiveness of this method for intensifying the heat exchange is marked by a small increase of the aerodynamic resistance of the system when changing from a single-phase into a two-phase flow. At the same time, the heat exchange intensity will increase considerably. The effectiveness is mainly a function of the physical properties of the liquid intermediate heat carrier, which has to be chosen by taking into account the highest

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Heat exchange of a two-phase ... 25552

S/170/61/004/008/002/016  
B116/B212

temperatures of the heating gas and also the lowest ones of the heating surface. For 300 + 350° organo-silicon compounds (tetracresylsilicate, tetrasililoxilane, etc) are suggested. There are 3 figures and 4 Soviet-bloc references.

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

SUBMITTED: May 17, 1961

Fig. 1: Diagram of a heat exchanger with liquid intermediate heat carrier.

Legend: 1) Feed pipes; 2) overflow plate (or diffuser) for dispersing the heat carrier; 3) pipe heat exchanger; 4) partition walls; 5) inertial drip tube of the liquid heat carrier; 6) filter; 7) pipe transporting the collected heat carrier for repeated dispersion; 8) exhaust; 9) container for collecting the intermediate heat carrier; 11) pump; 10) and 12) pipe for the liquid intermediate heat carrier; 13) heat carrier to be heated; 14) gaseous heat carrier.

Card 4/7

EL'PERIN, I.T.

International journal "Teplo- i massoperenos." Reviewed by  
I.T. El'perin. Inzh.-fiz. zhur. 4 no.9:136-137 S '61.  
(MIRA 14:8)  
(Heat--Transmission) (Mass transfer)

OVCHINIKOV, V.I., glav. red.; OSHCHEPKOVA, V.A., red.; PEKELIS, G.B.,  
red.; VOLKOV, N.P., red.; EL'PERIN, I.T., red.; ATNKOV, S.,  
tekh. red.

[Thermal and electric power] Teploenergetika; nauchno-tekhnicheskii sbornik. Minsk, 1961. 80 p. (MIRA 15:11)

1. Nauchno-tekhnicheskoye obshchestvo energeticheskoy promyshlennosti. Belorusskoye respublikanskoye otdelenie.  
(Power engineering) (Electric power)

EL'PERIN, I.T.

International journal "Teplo- i Massopereenos." Inzh.-fiz.zhur.  
5 no.3:137-138 Mr '62. (MIRA 15:3)  
(Heat--Transmission)(Mass transfer)

SMOL'SKIY, B.M.; EL'FERIN, I.T.

Special issue of the international journal "Heat and Mass Transfer"  
in commemoration of the 70th birthday of Ernst Heinrich Schmidt.  
Inzh.-fiz.zhur. 5 no.9:127-131 S '62. (MIRA 15:8)  
(Schmidt, Ernst Heinrich, 1892-) (Heat--Transmission)  
(Mass transfer)

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S/170/63/006/003/005/014  
B104/B186

24.5.200

AUTHOR: El'perin, I. T.

TITLE: Relationship between intensity and irreversibility of a heat transfer process

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 3, 1963, 40 - 44

TEXT: An attempt is made to find an analytical relation between the heat transfer coefficient  $\alpha$ , characterizing the kinetics of the heat transfer process, and the entropy factor  $\eta$ , characterizing the degree of deviation of the process from reversibility. Working from previous papers the re-

lation  $\alpha = b(1 - \eta_{en})^{-1}$  (10) is derived, where  $b = q/CT_0$ ;  $q$  is the thermal load of the heating surface,  $C$  is a constant, and  $T_0$  is the mean

temperature of the heated and the heating heat transfer agent. Using the definition  $\eta_{en} = |\Delta S_r|/\Delta S_H$  and (10) the amount of irreversibility of a heat transfer process is described by  $\Sigma \Delta s = b \Delta s_H / \alpha$  (11), where  $\Sigma \Delta s = \Delta s_H + \Delta s_r$  is the change of entropy in the heat transfer system.  $s_H$  and  $s_r$  are the changes of entropy in the heated and in the heating heat

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Relationship between intensity ...

S/170/63/006/003/005/014  
B104/B186

transfer agent. Formulas (10) and (11) show that an intensification of heat transfer under the same conditions improves the efficiency factor of the heat potential and reduces irreversibility. In general  $\alpha$  is a variable quantity and its local value is determined by  $\alpha = |s'(F)|/\eta_{tk}$ , where  $s'(F) = ds_{(H)}/dF$ , and  $\eta_{tk}$  is the thermal efficiency of an ideal Carnot cycle. The relationship obtained may be used to design heat exchangers. ✓

ASSOCIATION: Institut teplo- i massoobmena AN BSSR, g. Minsk (Institute of Heat and Mass Transfer AS BSSR, Minsk)

SUBMITTED: October 15, 1962

Card 2/2

LYKOV, A.V., akademik, red.; SMOL'SKIY, B.M., prof., red.; KUTATELADZE, S.S., prof., red.; PALEYEV, I.I., prof., red.; ~~EL'PERIN, I.T.,~~ kand. tekhn. nauk, red.; TIMOFEYEV, L., red. izd-va; VOLOKHANOVICH, I., tekhn. red.

[Heat and mass transfer]Teplo- i massoperenos; doklady. Pod obshchei red. A.V.Lykova i B.M.Smol'skogo. Minsk, Izd-vo Akad. nauk BSSR. Vol.2.[Heat and mass transfer during phase transitions and chemical transformations]Teplo- i massoperenos pri fazovykh i khimicheskikh prevrashcheniakh. 1962. 377 p. (MIRA 16:3)

- Inst Heat & Mass Transfer*  
1. Vsesoyuznoye soveshchaniye po teplo- i massoobmenu. 1st. Minsk, 1961. 2. Akademiya nauk Belorusskoy SSR (for Lykov).  
(Heat--Transmission) (Mass transfer)  
(Phase rule and equilibrium)



s/862/62/002/000/019/029  
A059/A126

AUTHOR: Ei'perin, I.T.

TITLE: Intensification of heat transfer between a gas and a solid surface with the aid of an intermediary liquid heat-transfer agent

SOURCE: Teplo- i massoperenos. t. 2: Teplo- i massoperenos pri fazovyykh i khimicheskikh prevrashcheniyakh. Ed. by A.V. Lykov and B.M. Smol'skiy. Minsk, Izd-vo AN BSSR, 1962. 181 - 189

text; Results of previous study on the intensification of convective heat transfer by way of using a liquid heat-transfer agent treated by the author are considered (IFZh, no. 11, 1959; Trudy Instituta energetiki AN BSSR, no. 11, 1960). This is done by introducing a high-temperature liquid heat-transfer agent absorbing heat from a gas in a mixing heat exchanger with either sprinkling of the packing or gas bubbling through the liquid heat-transfer agent. The effect of introducing the intermediary heat-transfer agent was previously found to be approximately

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Intensification of heat transfer between ....

S/862/62/002/000/019/029  
A059/A126

$$\frac{F}{F'} = \frac{\frac{1}{\alpha_1}}{\frac{1}{\alpha_1} + \frac{1}{\alpha_2}}, \quad (3)$$

where  $F$  and  $F'$  are the heated surfaces of the heat exchanger in usual-type apparatus and those with an intermediary heat-transfer agent, respectively;  $\alpha_1$ ,  $\alpha_1'$ , and  $\alpha_2$  are the coefficients of heat transfer from the gas side in the absence of an intermediary heat-transfer agent, between the intermediary heat-transfer agent and the heated surface, and from the side of the heated medium. Methods of heat-transfer intensification by way of separate heating and cooling of the intermediary heat-transfer agent and with combined heating and cooling of the same were tested, and it was shown theoretically that a two-phase heat-transfer agent consisting of a gaseous carrier with suspended finely divided drops of a non-volatile liquid gave optimum results which can be put into practice in different ways. Less energy is consumed for a given intensity of heat transfer, when the combined heating is used. The efficiency of this method of heat-transfer intensification is characterized by an insignificant increase of the aerody-

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S/862/62/002/000/019/029  
A059/A126

Intensification of heat transfer between ....

dynamic resistance of the system on transition from single-phase to two-phase flow with simultaneous considerable increase of the intensity of heat transfer. Thus, for a four-row chessboard-like assembly of pipes with water as the heat-transfer agent, the resistance of the system increases at a weight concentration of the liquid phase,  $g = 0.2$ , 1.055 times and the coefficient of heat transfer 17 times as compared to the single-phase gas medium. The efficiency of the given method is shown to depend on the physical properties of the intermediary heat-transfer agent which should be selected both with respect to maximum temperature of the heating gas and to minimum temperature of the heated surface. Organosilicon compounds such as tetracresyl silicate and tetraxylylosilane, and others are recommended for temperatures up to 300 - 350°C. There are 7 figures.

ASSOCIATION: Energeticheskiy institut AN BSSR, g. Minsk (Power Engineering Institute of the AS BSSR, City of Minsk)

*(Inst Heat + Mass Transfer)*

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S/362/62/002/000/020/029  
A059/A126

AUTHOR: El'perin, I.T.

TITLE: Investigation of transfer processes in countercurrent streams

SOURCE: Teplo- i massoperenos. t. 2: Teplo- i massoperenos pri fazovykh i khimicheskikh prevrashcheniyakh. Ed. by A.V. Lykov and B.M. Smol'skiy. Minsk, Izd-vo AN BSSR, 1962. 190 - 197

TEXT: The results of previous investigations of transfer processes in countercurrent apparatus are analyzed in this paper. The countercurrent-flow method which is used to intensify heat and mass-transfer processes in gaseous suspensions is based on the repeated separation of the gaseous suspension into separate streams with subsequent impact mixing at an angle of 180° which is followed by new separation, etc. The observed increase in the solid-phase concentration in the region of impact, vibratory motion of the particles, and their penetration from one stream into another showed that the accepted model used to simulate the phenomenon has been confirmed in practice which indicates a substantial intensification of heat and mass transfer processes in this device. The coefficient of local resistances in the impact region of the self-simulating

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Investigation of transfer processes in ....

S/862/62/002/000/020/029  
A059/A126

zone was found to be  $\xi_{\text{spec}} = 2Eu \approx 1$ . Calculations show that the total resistance of an apparatus containing 3 to 4 units, at a mean velocity of the gas  $v_g = 24$  m/sec and a specific gravity  $\gamma_g = 1.0$ , is 120 to 160 mm water gauge. The calculated coefficient of heat transfer in the counterflow model at a velocity of the air stream  $v_g = 22$  m/sec reached  $\alpha = 25,000$  kcal/m<sup>2</sup> · h · degree, while the coefficient of heat transfer for poppy seeds calculated from the velocity of suspension is  $\alpha_p = 400$  kcal/m<sup>2</sup> · h · degree. The sharp increase of the calculated coefficient of heat transfer in "countercurrent streams" as compared to the usual gaseous suspension is explained to be due to the following facts: a) the velocity of phase motion in the impact region is 8 to 10 times that of suspension of poppy seeds; b) a 5 to 7-fold increase in solid concentration occurs in the region of impact; c) impact mixing promoted the agitation of the gas flow; and d) the surface of the seed-case was involved in the exchange processes. Since the effect of the increase in concentration cannot be distinguished from that of the relative velocity of phase motion and other factors intensifying the transfer processes, the conventional value of the calculated coefficient of heat transfer has been introduced incorporating the total effect of the method of countercurrent flows. Assuming in the case considered a 5-fold

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Investigation of transfer processes in ....

S/862/62/002/000/020/029  
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increase in the solid concentration, the actual coefficient of heat transfer related to the poppy-seed surface will be 6,000 kcal/m<sup>2</sup> · h · degree. By way of increasing the relative velocity, a 7-fold increase of  $\alpha$  is obtained; the other factors leading to an about double increase in the coefficient of heat transfer. The favorable conditions obtained with countercurrent-flow devices is shown by the power of the Reynolds criterion in the critical heat and mass-transfer equation:

$$\text{Nu} = 9.6 \cdot 10^{-5} \text{Re}^{1.9} \quad (4)$$

resulting in an approximately equal increase in the hydrodynamic resistance of the apparatus and in the intensity of heat and mass-transfer processes when the velocity of flow is increased. The practical applications of the countercurrent-flow method are shown. There are 5 figures.

ASSOCIATION: Energeticheskiy institut AN BSSR, g. Minsk (Power Engineering Institute of the AS BSSR, City of Minsk)

Card 3/3

EL'PERIN, I.T.

Symposium on Convective Heat Transfer in Incompressible Liquid Flow,  
held at Kaunas. Inzh. -fiz. zhur. 5 no.10:125-129 D '62. (MIRA 15:12)  
(Heat-Convection) (Hydrodynamics)

EL'PERIN, I.T.

Heat and mass transfer in reacting systems. Inzh.-fiz. zhur.  
no.12:27-34 D'63. (MIRA 17:2)

1. Institut teplo- i massobmena, Minsk.

*Inst Heat + Mass Transfer*



EL'PERIN, I.T.

Relation between the intensity and irreversibility of the heat transfer process, Inzh.-fiz.zhur. 6 no.3:40-44 M<sup>r</sup> '63.

(MIRA 16:14)

1. Institut teplo- i massobmena AN BSSR, Minsk.  
(Heat--Transmission) (Irreversible processes)

L 14397-63

EPR/EWT(1)/EPF(c)/EPF(n)-2/EDS

APFTC/ASD/SSD

PB-4/Pr-4/

Pu-4 WH/IJP(C)

ACCESSION NR: AP3003053

S/0170/63/000/006/0100/0105

AUTHOR: El'perin, I. T. (Minsk)

TITLE: Indicators of the efficiency of transport processes

SOURCE: Inzhenerno-fizicheskij zhurnal, no. 6, 1963, 100-105

TOPIC TAGS: transport process, power consumption, transport process irreversibility

71  
70

ABSTRACT: The author develops the method first proposed by himself El'perin I. T. (Dissertation, AN BSSR, Minsk) of assessing the efficiency of heat and mass transfer processes. Two indicators are proposed: The power efficiency  $K_{sub} q(m)$ , which characterizes the power consumption for a prescribed rate of the process, and the entropy coefficient  $\eta_{sub} en$  Gokhshteyn D. P. (Entropiyny metod rascheta energeticheskikh poter'. Energoizdat, 1951), which characterizes the irreversibility of the transport process. These indicators can be used for the optimization of transport processes. Original article has: 14 formulas.

Association: Institute of Heat and Mass Transfer, AN BSSR

Card 1/21

EL'PERIN, I.T.

Intercollegiate Conference on industrial heat engineering. Inzh.-fiz.  
zhur. 6 no.8:138 Ag '63. (MIRA 16:10)

EL'PERIN, I.T.; BRAZHNIK, L.G.

"Advances in magnetohydrodynamics"; collection of articles.  
Inzh.-fiz.zhur. 6 no.10:137-139 0 '63. (MIRA 16:11)

EL'PERIN, I.T.; MINKOV, V.A.

Thermodynamic optimization of technological heat exchange systems with cascade fluidized beds. Inzh.-fiz. zhur. 6 no.11:32-41 N '63. (MIRA 16:11)

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

*Instit. Heat & Mass Transfer*

ACCESSION NR: AP4044412

S/0170/64/000/008/0016/0019

AUTHORS: El'porin, I. T.; Galershteyn, D. M.; Levental', L. I.

TITLE: The influence of surface effects and mobility on processes of transfer in heterogenic systems

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 8, 1964, 16-19

TOPIC TAGS: flow channel, pipe flow, Reynolds number, heat exchange, mass exchange, flow velocity pulsation, hydrophobization/ GKZh 94 hydrophobization liquid, PPTN1 potentiometer, GZP 47 galvanometer

ABSTRACT: The influence of velocity pulsation and wall moistening on the Reynolds number was studied. A special test apparatus was designed and is shown in Fig. 1 on the Enclosures. In the first series of tests to determine the influence of velocity pulsation upon Reynolds number observations were made of the distribution of water temperature along the test pipes and of the pulsation frequency. Laminar-to-turbulent flow transition was made visually, thus determining a minimal Reynolds number range. Resulting values of Reynolds number versus pulsation frequency in cycles per second are shown in Table 1 on the Enclosures. The second series of tests determined the influence of wall absorption on the critical Reynolds number. GKZh-94 hydrophobization silica suspension liquid was used in the tests, and

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ACCESSION NR: AP4044412

measurements were taken with a PPTN-1 potentiometer and a GZP-47 galvanometer. Results indicated that for a Reynolds number between 5000 and 10000 the heat exchange intensity and pipe hydrophobization were less than those for a pipe without hydrophobization treatment. The authors expressed the opinion that the superposition of velocity pulsations and wall hydrophobization decreases the value of the Reynolds number and changes the relationship  $Nu = f(Re)$ . Orig. art. has: 2 figures, 3 equations, and 1 table.

ASSOCIATION: Institut teplo-i massobmena AN BSSR (Institute of Heat and Mass Exchange, AN BSSR)

SUBMITTED: 25Mar64

ENCL: 02

SUB CODE: ME

NO REF SOV: 003

OTHER: 000

Card 2/4

ACCESSION NR: AP4044412

ENCLOSURE: 01

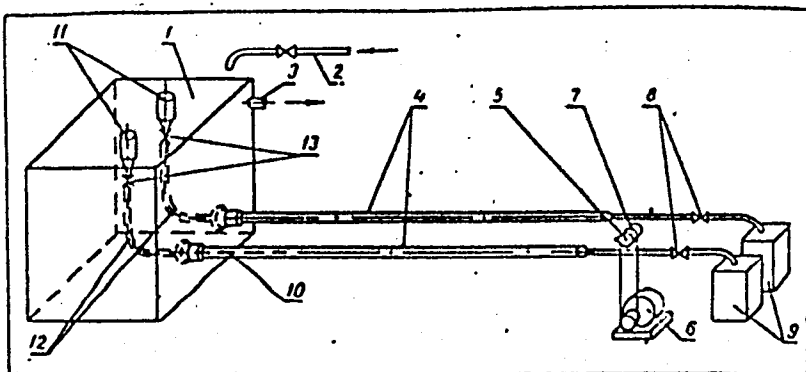


Fig. 1. Schematic of the experimental setup.

1- tank; 2- supply pipe; 3- modulation pipe; 4- working channels;  
5- pump pulsator; 6- electric motor; 7- variator; 8- regulator valves;  
9- measuring tanks; 10- pipes for coloring emission, 11- pigment  
containers; 12- resin joining pipes; 13- regulator valves.

Card

3/4



ACCESSION NR: AP4044412

ENCLOSURE: 02

$n$ , cycles	0	4.65	5.74	10.72	17.21	19.92
$Re_k$	2310	1750	1699	1597	1533	1511

Table 1. Dependence  $Re_k = f(n)$ .

Card

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**"APPROVED FOR RELEASE: 08/22/2000**

**CIA-RDP86-00513R000412030002-9**

**APPROVED FOR RELEASE: 08/22/2000**

**CIA-RDP86-00513R000412030002-9"**

1-12438-65

ACCESSION NR. 494047447

**"APPROVED FOR RELEASE: 08/22/2000**

**CIA-RDP86-00513R000412030002-9**

**APPROVED FOR RELEASE: 08/22/2000**

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**APPROVED FOR RELEASE: 08/22/2000**

**CIA-RDP86-00513R000412030002-9"**

ZABRODSKIY, S.S.; LEYZEROVICH, G.Ya.; RASHKOVSKAYA, N.B.; EL'PERIN, I.T.

All-Union seminar on the fluidized bed. Inzh.-fiz. zhur. 7 no.5:  
121-124 My '64. (MIRA 17:6)

EL'PERIN, I.T.; GALE/SHTEYN, D.M.; LEVENTAL', L.I.

Effect of surface phenomena and unsteadiness on transfer processes  
in heterogeneous systems. Inzh.-fiz. zhur. 7 no.8:16-19 Ag '64.  
(MIRA 17:10)

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



EL'PERIN, I.T.; MINKOV, V.A.

Use of two-phase systems as thermodynamic working substances. Inzh.-fiz.  
zhur. 7 no.9:102-107 S '64. (MIRA 17:12)

1. Institut teplo- i massobmena AN Belorusskoy SSR, Minsk.

EL'PERIN, I. T.; GALERSHTEYN, D. M.; LEVENTAL', L. I.

"The influence of unsteadiness and of surface effects on the flow regime and heat transfer."

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

Inst of Heat & Mass Transfer, AS BSSR.

EL'PERIN, I. T.; ANTIPOV, V. V.; GALERSHTEYN, D. M.; PAVLOVSKIY, L. M.; KHOKHLOV, V. Z.

"Study of transfer processes in two-phase systems of suspension type with some properties of phase interaction arrangement."

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

All-Union Sci Res Inst NSM

EL'PERIN, I.T.; RABINOVICH, G.D.

Second All-Union Conference on Heat and Mass Transfer. Inzh.-fiz.  
zhur. no.10:130-137 0 '64. (MIRA 17:11)

ACC NR: AT5027199 WW/DJ UR/0000/65/000/000/0130/0137

AUTHOR: Smol'skiy, B.M. (Professor); El'perin, I. T.

ORG: Heat and Mass Transfer Institute, AN BSSR, Minsk (Institut teplo- i massoobmena AN BSSR)

TITLE: Effect of the lubricating property of a surface on the transfer process in systems consisting of a drop-form liquid and a solid body

SOURCE: AN BSSR. Institut teplo- i massoobmena. i massoobmen tel s okruzhayushchey gazovoy sredoy (Heat and mass exchange of bodies with the surrounding gaseous medium). Minsk, Nauka i Tekhnika, 1965, 130-137

TOPIC TAGS: surface active agent, heat transfer, Reynolds number, FRICTION, FLUID FLOW, HYDRODYNAMICS, LUBRICATION

ABSTRACT: A determination was made of the hydrodynamic friction resistance in the flow of a fluid in tubes. The surface of the tubes was carefully cleaned to avoid the presence of adsorbed films of foreign material. On the basis of experimental data obtained on the flow time of the fluid, determinations were made of the friction coefficients of tubes made of various materials. The walls of the tubes were rubbed previously with distilled water and with various surface active agents. The effect of the surface active agents appears gradually and reaches a maximum after a period of from 1 to 10 minutes, after which it remains con-

Card 1/2

L 8836-66

ACC NR: AT5027199

stant. The experimental data are presented in tabular form. It is noted that in individual cases the friction coefficient was lowered by 22%. The article goes on to consider the effect of pulsation velocity and lubricating properties on the lowering of the critical Reynolds number. A diagram of the experimental apparatus is given. In the experiments, measurements were made of the temperature of the water, its flow rate through the tube, the duration of the test, and the frequency of the pulsations. The equipment permitted visual observation of the transition point from laminar to turbulent flow, and determination of the critical Reynolds number, which lay within the limits of 2250-2350. A second series of experiments was made to determine the effect of lubricating properties on the lowering of the critical Reynolds number. It was found that, with application of pulsation to flow in a tube which has been treated with surface active agents, the critical Reynolds number was lowered to 1200-1300. Finally, the article considers the effect of lubricating properties on heat transfer. In this case, experimental results indicate that at low Reynolds numbers, from 5,000 to 10,000, the intensity of heat transfer in a tube treated with surface active agents is less than in a tube without coating. For Reynolds numbers greater than 10,000, heat transfer in the treated tube was greater than in the uncoated tube. Orig. art. has: 2 figures and 1 table.

SUB CODE: ME, GC/ SUBM DATE: 02Jul65/ ORIG REF: 005/ OTH REF:002

Card 2/2

L 2031-66 EWT(1)/EWT(m)/EPF(c)/ETC/EPF(n)-2/ENG(m)/EMP(j)/T/ETC(m) RPL WH/JW/WE/

ACCESSION NR: AP5022389

UR/0170/65/009/003/0364/0368  
536.25+536.75

RM

AUTHOR: El'perin, I. T. <sup>un. 53</sup>

TITLE: Thermodynamic investigation of heat and mass transfer in the nonuniform flow of a gas suspension

SOURCE: Inzheherno-fizicheskiy zhurnal, v. 9, no. 3, 1965, 364-368

TOPIC TAGS: thermodynamics, heat transfer, mass transfer, thermodynamic state equation

ABSTRACT: In the nonuniform movement of the flow of a gas suspension, in addition to thermodynamic forces, new forces appear which increase the rate of the transfer process. To determine these forces, the article considers a nonuniform multicomponent flow of a gas containing suspended elementary nuclei which consist of particles of the solid surrounded by a blanket of gas whose composition is different from the composition of the carrier gas. It is assumed that the actual discrete system can be approximately described as a continuous multicomponent gas mixture, with a different rate of motion of the individual components relative to the center of mass of the system. For the purposes of the calculation, it is

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L 2031-66

ACCESSION NR: AP5022389

assumed that the internal energy of a unit of mass of the multicomponent gas mixture is equal to the difference between the total energy of the gas and the potential and kinetic energies of all components. The final equation derived permits determination of the characteristic acceleration of the system. Orig. art. has: 14 formulas

ASSOCIATION: Institut teplo- i massoobmena AN BSSR, g. Minsk. (Institute of Heat and Mass Transfer of the AN BSSR, Minsk)

SUBMITTED: 00

ENCL: 00

SUB CODE: TD, ME

NR REF SOV: 008

OTHER: 000

Card 2/2



L 26393-66 EWP(m)/EPF(n)-2/EWP(j)/EWT(1)/EWT(m)/ETC(m)-6/T/EWA(d) RM/WW/DJ  
ACC NR: AP6007191 SOURCE CODE: UR/0170/66/010/002/0235/0239

AUTHORS: El'perin, I. T.; Smol'skiy, B. M.; Levental', L. I.

79  
B

ORG: Institute of Heat and Mass Transfer, Academy of Sciences BSSR, Minsk  
(Institut teplo- i massoobmena AN BSSR)

TITLE: On the problem of lowering the hydrodynamic resistance in conduits

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 10, no. 2, 1966, 235-239

TOPIC TAGS: fluid friction, friction loss, polymer rheology, Reynolds number, turbulent flow, laminar flow

ABSTRACT: The reduction of hydraulic friction in tubes or pipes by adding high-molecular weight polymers is analyzed. It is shown that these surface-active polymers are absorbed on the tube walls and oriented in such a manner in the laminar sublayer that they lower the skin friction, generate slip near the wall, and damp out turbulent fluctuations. Starting with the power law equation for shear in rheological admixtures

$$\tau = k \gamma^n$$

or,

$$\tau = D \Delta P / 4L = K (8w_m / D)^n$$

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TRC. 535 504 342.535 503 2.535 542 2

L 26393-66

ACC NR: AP6007191

the following expression is derived for the modified flow rate in a tube after the addition of the polymers,

$$q > a \left( \frac{K}{D^{1.5} \rho^{0.25}} \right)^{\frac{1}{1.75-a}}$$

$$a = 3.2 \frac{4a^2 + 1.25}{5.75 - a} = 0.3164$$

A numerical example is given to illustrate the point. Orig. art. has: 10 formulas.

SUB CODE: 20/ SUBM DATE: 11Sep65/ ORIG REF: 012/ OTH REF: 006

Card 2/2 . C.O

L 44227266 EWT(1)/EWP(m)/EWT(m)/T IJP(c) DS/WW/JW/WE

ACC NR: AP6024636 SOURCE CODE: UR/0170/66/011/001/0037/0041

AUTHOR: Lebedev, P. D.; Leonchik, B. I.; El'perin, I. T. 61

ORG: Power Engineering Institute, Moscow (Energeticheskiy Institut);  
Heat and Mass Transfer Institute, AN BSSR, Minsk (Institut Teplo-  
Massoobmena AN BSSR) 3

TITLE: Determination of transport potential fields in flow of coarsely  
dispersed gas suspensions

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 11, no. 1, 1966, 37-41

TOPIC TAGS: combustion, spray flame, two phase flow, *gas flow, energy transport, calorimeter*

ABSTRACT: A theoretical and experimental study was made of the interphase energy transport in coarsely dispersed systems. In the analysis, the flow of the two-phase system was considered to be quasi-homogenous with sources and sinks of matter. The redistribution of the potentials (temperature gradient, chemical potential, energy flux) takes place due to the interaction of the phases. A differential calorimeter is described for determining the mean particle temperature on the basis of a compensation method. The generalized data on the local transport processes can be used for calculating spray flames. Orig. art. has: 4

Card 1/2

UDC: 541.182.2/.3

L 44227-66

ACC NR: AP6024636

formulas and 2 figures.

SUB CODE: 2021/ SUBM DATE: 03Jan66/ ORIG REF: 014

Card

2/2 *MTT*

EL'PERIN, S., inshener (Riga).

Production norms based on technology. Prom.koon. no.8:24-25 Ag '57.  
(MIRA 10:9)

(Production standards)

MATUL'SKIY, I. G.; EL'PERIN, S. A.

Determination of the demand of railroad workers for preventive care by preventive medicine institutions. Zdrav. Ros. Feder. 6 no.8:17-20 Ag '62. (MIRA 15:7)

1. Iz otdeleniya organizatsii i ekonomiki zdravookhraneniya na zheleznodorozhnom transporte (rukovoditel' I. G. Matul'skiy) Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnoy gigiyeny (dir. P. N. Matveyev) Ministerstva putey soobshcheniya.

(RAILROADS--EMPLOYEES--MEDICAL CARE)  
(MEDICINE, PREVENTIVE)

L 24508-66 EWT(m)/DWF(t) TSP(t) JD

ACC NR: AP6007713

SOURCE CODE: UR/0413/66/000/003/0112/0112

AUTHOR: Grinshpun, S. I.; Zakis, Ya. M.; Kokle, A. L.; El'perin, S. I. 17  
6

ORG: none

TITLE: Device for metallizing in vacuum.<sup>18</sup> Class 48, No. 178635<sup>18</sup> [Announced by the Design and Technological Office for Metallizing in Vacuum, Council of National Economy, Latvian SSR (Konstruktorsko-technologicheskoye byuro metallizatsii v vakume SNKh Latvyskoy SSR)].

SOURCE: Izobreneniya, promyshlennyye obraztsy, tovarnyye znaki, no. 3, 1966, 112

TOPIC TAGS: metallizing, vacuum metallizing

ABSTRACT: An Author Certificate has been issued describing a device for metallizing in vacuum. It consists of vacuum chambers with drums, cells, evaporators, vacuum shut-off devices, shut-off devices, a collector, an oil-absorbing filled trap, and a vacuum-producing system. To simplify the design and reduce the operating cycle, the evaporators are made to serve simultaneously as glow-discharge electrodes and the entire space of the collector is filled with an oil-absorbing material. To secure the collector in a vertical position, it is equipped with a self-adjusting lever-type tightening device (see Fig. 1). [LD]

Card 1/2

UDC: 621.793.093.14

U 29700-00

ACC NR: AP6007713

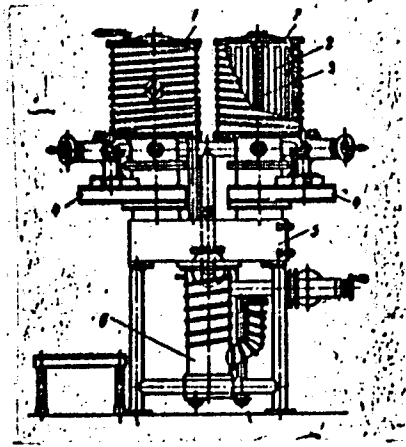


Fig. 1 - Device for metallizing in vacuum.

- 1 - vacuum chambers; 2 - drum with cells;
- 3 - evaporator; 4 - vacuum shut-off devices;
- 5 - collector; 6 - vacuum system

SUB CODE: 13/  
Card 2/2 BLG

SUBM DATE: 06Jun64/



HEL'PERIN, Ye.Z.

Result of prolonged sleep therapy of rheumatism in children. Vopr.  
pediat. 20 no.4:3-8 July-Aug 1952. (GLML 23:2)

1. Senior Scientific Associate. 2. Of the State Scientific-Research  
Pediatric Institute (Director -- A. L. Libov; Scientific Supervisor --  
Prof. A. B. Volovik).

SMIRNOVA, A.M., kandidat meditsinskikh nauk; EL'PERIN, Ye.Z., kandidat meditsinskikh nauk

Materials on the clinical and immunological characteristics of rheumatic fever in children. Vop.okh.mat. i det. 1 no.5:34-39 S-0 '56.

(MIRA 9:11)

1. Iz otdela mikrobiologii (zav. - prof. V.I.Ioffe) Instituta eksperimental'noy meditsiny i iz revmaticheskogo otdleniya Gosudarstvennogo nauchno-issledovatel'skogo pediatricheskogo instituta (dir. - prof. A.L.Libov), Leningrad.

(RHEUMATIC FEVER)

ARBUZOV, Yu.A.; BOLESOV, I.G.; BREGADZE, V.I. ; KOLOSOV, M.N.; SHEMYAKIN, M.  
M.; EL'PERINA, Ye.A.

Tetracycline series. Report No.18: Synthesis of 2- and 3-substituted 9-keto-1,2,3,4, 4a,9,9a,10-octahydroanthracenes. Izv.AN SSSR. Ser.khim. no.2:310-319 F '64. (MIRA 17:3)

1. Institut khimii prirodnykh soyedineniy AN SSSR.

KUCHEROV, V.F.; ONISHCHENKO, A.S.; RUDENKO, B.A.; EL'PERINA, Ye.A.

Influence of the temperature on the structural directivity of diene synthesis. Dokl. AN SSSR 158 no.2:897-399 S '64.

(MIRA 17:10)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR. Predstavleno akademikom B.A.Kazanskim.

GUSEV, B.P.; EL'PERINA, Ya.A.; KUCHEROV, V.F.

Isomerization of alkyl diacetylenes. Izv. AN SSSR. Ser. khim.  
no.9:1659-1660 '65. (MIRA 18:9)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

EL'PERINA, Ye.A.; GUSEV, B.P.; KUCHEROV, V.F.

Conversions of secondary diacetylenic alcohols as a result of  
alkaline isomerisation. Izv. AN SSSR. Ser. khim. no. 12:2215-2216  
'65. (MIRA 18:12)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.  
Submitted April 14, 1965.

ELPIDIN, E. V.

"Anatomic Investigation of the Shoulder Plexus of the River Beaver." Thesis for degree of Candi. Biological Sci. Sub 4 Apr 49, Moscow Fur and Pelt Inst

Summary 82, 18 Dec 52, Dissertations Presented For Degrees in Science and Engineering in Moscow in 1949. From Vechernyaya Moskva, Jan-Dec 1949.

ELPIDINA, O.K.

AM

ELPIDINA (Mrs O. K.). On toxins of wilting. - *C.R. Acad. Sci. U.R.S.S.*, N.S., iii, 8, pp. 360-364, 1935.

In the experiments outlined in this paper the author tested the wilting effect on cut clover and potato leaves, and sweet clover and tomato seedlings of the toxins extracted by two different methods, the first based on Richter's method (*Wyp. on. Acp. R.-D. [J. exp. Agric. S.E.]*, 1929) and the second that used by Schaffnit and Lüdtko (*R.A.M.*, xii, p. 314), from the solid and liquid substrata of pure cultures of a species of *Fusarium* which causes a potato wilt in Russian Central Asia. The results [which are tabulated] showed that while the four hosts tried differed from one another in their reaction to the different toxin preparations, the greatest wilting effect on all of them was exerted by those solutions that contained the largest amount of ammonia. The same toxin solutions were unable to cause any wilting of the plants tested after the ammonia had been removed from them. These findings indicate that the toxic principle of the toxin solutions is ammonia, and the conclusions of the German authors are considered to be vitiated by the fact that methyl alcohol, used by them for extraction, is a good solvent for a number of ammonium salts, this warranting the belief that their toxin preparations were fairly highly concentrated solutions of ammonium salts.

ASD-514 METALLURGICAL LITERATURE CLASSIFICATION



ELPIDINA, O.K. A-4

*BC*

Processes and properties of...

Phytotoxins occurring in grain and responsible for "mottle angina."  
 13 K. K. K. *Comp. rend. Acad. Sci. U.R.S.S.*, 1948, 68, 43-48.  
 "Mottle angina" caused in man and in cattle by eating grain or products from grain left in the field during winter is associated with a heat-stable toxin extracted from the grain by water, alcohol, or other.  
 A. G. P.

*Sub. Phytotoxins - Kazan Med Inst.*

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED	INDEXED	SERIALIZED	FILED

ELPIDINA, O. K.

ELPIDINA, O. K. "Biological Method of Determining the Toxicity of Grains causing Septic Sore Throat," Comptes Rendus (Doklady) de l'Academie des Sciences de l'URSS, vol. 51, no. 2, 1956, pp. 167-169. 511 Ph44.

So: SIR: S190-15, 15 Dec. 1953

*Elpidina, O. K.*

A test for the determination of penicillin in the saliva.  
O. K. Elpidina. *Trudy Gosudarst. Nauch. Issledovatel. MD*  
*Inst. Ucheb. Gorla i Nosa* 1953, No. 3, 82-7; *Referat. Zhur.*  
*Khim., Biol. Khim.* 1955, No. 6570. — Use a test tube contg.  
0.2-1.0 ml. of the following nutrient medium: serum 2 ml.;  
10% glucose 2 ml.; distd. H<sub>2</sub>O 0 ml.; satd. soln. phenol red  
0.25 ml., pH 7.8. The medium should be red or strawberry  
red in color. Inoculate the test tube with 1-3 loopfuls of a  
culture of streptococci and 1-4 drops of the tested sputum.  
Incubate at 25-30°. If the saliva tested is judged to be  
heavily contaminated with bacteria the use of the streptococ-  
cal culture can be eliminated. In the presence of penicillin,  
the proliferation of the bacteria is arrested, the pH of the  
medium remains the same and no change in the color takes  
place. In the absence of penicillin, bacterial proliferation  
proceeds, glucose is fermented, lactic and/or pyruvic acid is  
produced, the pH is lowered and the color of the medium  
changes to yellow in as short a time as 2-3 hrs. It is claimed  
that the test will indicate the presence of as little as 0.03  
7/ml. of penicillin.

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Izosimov) Kazanskogo meditsinskogo instituta i laboratoriya  
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2326. DISINFECTION OF DRINKING WATER WITH THE COMBINED ACTION OF ULTRASONIC WAVES AND SMALL DOSES OF DISINFECTANTS (Russian text) - E. P. Piner L. I. - GIG. I SAN. 1958, 7 (26-29) Graphs 1 Tables 2 illus. 2

A high bactericidal effect on Esch. coli has been obtained by the action of ultrasonic waves over a considerable period (10-15 min.). During shorter exposure periods the ultrasonic waves were active only in combination with small doses of disinfectants (chlorine, hydrogen peroxide); the authors obtained bactericidal effects in running water. The disinfecting action depended on the rate of water flow, time of exposure and depth of the water layer.

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