S/147/60/000/01/011/018 E022/E535

On the Mechanism of the Process of Heat- and Mass-Transfer During Evaporation Cooling of Strongly Heated Surfaces

layer to the plane B distant from it at twice the length of the free molecular path, Eq (1) (where nr and wr are the number of molecules per unit volume and their mean velocity, N - Avogadro number, C specific heat of one mole of the gas) and vg remembering that the pressure of a mixture p is the sum of the partial pressures of a given gas prand the diffusing substance pd Eq (4) is derived.

Note: Throughout this article the meaning of the suffixes is as follows: g (f in the Russian text) - gas, d (f in the Russian text) - diffusing substance, c - mixture of the two, M, b, o - parameters at the wall, at the outer edge of the boundary layer and outside the boundary layer, respectively.

Them following the same assumptions as were made in deriving expressions for the thermal conductivity of the gases (Ref 8), using Eq (5) in which  $\lambda_{\rm gd}$  is the

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coefficient of heat conduction of the gas when diffusion is present, M is the molecular weight and  $\mu_g$  is the viscosity of the gas and relating this with the corresponding heat conduction coefficient without diffusion,  $\lambda$  (Eq 6), it is found that the two coefficients differ by the pressure ratio  $p_r/p_c$ . The partial pressure  $p_g$  of the gas varies across the boundary lawer and therefore an expression for the mean value of the heat conduction coefficient  $\lambda$  is introduced (Eqs 8 and 9),  $\delta$  being the thickness of the boundary layer. Employing now the Stefan relation, Eq (10), for the diffusive process, (g being the diffusion flux and k the coefficient of diffusion), integrating it on the assumption that k = const and combining the result with Eq (9), the relation Eq (12) is obtained which also can be expressed by Eq (14). Fig 2 shows the variation of  $\lambda$  with

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On the Mechanism of the Process of Heat- and Mass-Transfer During Evaporation Cooling of Strongly Heated Surfaces

temperature in the undisturbed stream (tgo): the curves 1 and 2 refer to the dry and 20% wet air, respectively, without diffusion, curve 3 represents  $p_{gM}/p_{gT}$  versus t ( $p_{gT}$  is the logarithmic mean value of the partial pressure of the given gas as expressed by Eq (13), while curves 4 and 5 refer to the dry and 20% wet air respectively, when diffusion of the water The experimental data of vapour is taking place. H. Seifert et al. (Ref 12) agree with these graphs. When no diffusion takes place heat transfer from hot gases to a wall is usually determined by the Nusselt number Nu as given by Eqs (15) and (16) for the external and internal flows respectively. To account for the effect of diffusion on the heat transfer, Eq (14) can be used in the manner shown in Eq (17), this results in Eqs (19) and (20) instead of Eqs (15) and (16). When the partial pressures of the diffusing

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On the Mechanism of the Process of Heat- and Mass-Transfer During Evaporation Cooling of Strongly Heated Surfaces

substance at the surface is not very high the mass transfer due to diffusion may be determined by Eq (21), the suffix D denoting the diffusion criteria. For higher partial pressures and especially when liquid temperatures are near the boiling point of the given pressure of the mixture, it is necessary to use Stefan's equation of diffusion (Eq 24) instead of that of Fik (Eq 22), which eventually leads to Eq (26) for the external and Eq (27) for the internal flows. The diffusive Nusselt number is based on the temperature of the liquid and the other number on the temperature of the gases. To determine the temperature of the liquid the analysis starts with Eqs (28) and (30) which together lead to Eq (32), so that the temperature of the liquid may be found if the relation between the partial pressure of the diffusing liquid is known as a function of the temperature of the liquid. Fig 3 shows the relationship between the temperature of the liquid

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On the Mechanism of the Process of Heat- and Mass-Transfer During Evaporation Cooling of Strongly Heated Surfaces

and the temperature of the gases outside the boundary layer (t ) as determined by Eq (32) for various pressure conditions. The few experimental data available are also introduced in the figure, viz. o from D. I. Polishchuk (Ref 13) and  $\Delta$  from G. R. Kinney (Refs 14 and 15). The agreement is considered good. Finally the amount of the evaporated liquid per unit area and unit time is determined, Eq (34), and the effectiveness of the cooling is then analysed. This is defined as the relative specific evaporation of the liquid  $g_d/g_g$ , i.e. the ratio of the evaporated liquid per unit area of the cooled surface to the rate of flow of the gases per unit area normal to the direction of the flow. Its value is given by Eq (35), and this is plotted in Fig 4 (graphs 1, 2 and 3) for the case that water is being evaporated from the internal surface of the tube in hot air. These curves are compared with

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S/147/60/000/01/011/018 E022/E535

On the Mechanism of the Process of Heat- and Mass-Transfer During Evaporation Cooling of Strongly Heated Surfaces

the theoretically developed relations of L. Crocco (Ref 4) and E. Knuth (Ref 5) (graphs 5 and 4 respectively), as well as with their no diffusion alternatives as given by Eqs (36) and (37) (graphs 6 and 7 respectively). The small deviations from each other of the Crocco graphs (5 with diffusion, 6 without diffusion) seem to indicate that the factors considered by him do not influence greatly the heat transfer rates, but the large difference between the curves 1 and 7, the former taking into account the variation of the heat conduction and the latter neglecting it, indicate clearly the strong effect of this factor on the heat- and masstransfer. The article concludes with the statement that the diffusion caused increase in the thermal resistance of the boundary layer appears to be the cause of the widely known but theoretically unexplained fact that cooling of walls which are placed in hot air streams by injecting air or nitrogen is not as effective

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S/147/60/000/01/011/018 E022/E535

On the Mechanism of the Process of Heat- and Mass-Transfer During Evaporation Cooling of Strongly Heated Surfaces

as by injecting hydrogen, quickly evaporating liquids or other substances which diffuse perfectly in air.

There are 4 figures and 18 references, 11 of which are Soviet, 7 English.

ASSOCIATION: Kafedra soprotivleniya materialov, Kazanskiy aviatsionnyy institut (Chair on Strength of Materials, Kazan' Aviation Institute)

SUBMITTED: April 30, 1959

Card 9/9

s/139/60/000/03/016/045 E032/E314

AUTHOR:

Alimov, R.Z.

TITLE:

Approximate Method for Taking Into Account the Effect of Diffusion on the Thermal Conductivity of Gases in the Boundary Layer \

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, Nr 3, pp 97 - 102 (USSR)

ABSTRACT: Using the kinetic-theory discription of thermal conductivity, an analysis is given of the effect of diffusion of vapour adiabatically evaporating from a liquid on the heat exchange between the liquid and a surrounding hot gas. Simplified calculations show that the stream of evaporated vapour diffusing in the direction opposite to the heat flow tends to reduce the heat exchange through a reduction in the thermal conductivity of the

boundary layer.

There are 2 figures and 4 Soviet references.

Card1/2

S/139/60/000/03/016/045

Approximate Method for Taking Into Account the Effect of Diffusion on the Thermal Conductivity of Gases in the Boundary Layer

ASSOCIATION: Kizanskiy aviatsionnyy institut (Kazan Aviation Institute)

SUBMITTED: April 6, 1959

Card 2/2

8/170/60/003/005/005/017 B012/B056

AUTHOR:

Alimov, R. 2.

TITLE:

Heat and Mass Exchange in Cooling by Evaporation of

Surfaces Heated to High Temperatures

PERIODICAL:

Inshenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 5,

pp. 31 - 39

TEXT: The thermal flux of hot gases to the surface of a solid coated with a thin liquid film is accompanied by a vapor current of opposite direction. The presence of a diffusion current of a direction opposite to that of the heat flux considerably modifies the thermal conductivity of the medium in the boundary layer. The processes of heat and mass exchange occur mainly in the boundary layer. The molecules of the diffusing substance shift between the molecules of the hot gas in the direction leading away from the wall and cause a specific current of the diffusing substance. It is assumed that this current, which is inverse to the heat flux and gradually heated, does not participate in the heat transfer of gases to the wall. The last process is caused only by the

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Heat and Mass Exchange in Cooling by Evaporation of Surfaces Heated to High Temperatures s/170/60/003/005/005/017 B012/B056

gas molecules, the concentration of which decreases continuously during their approach to the wall. The criterial equations (17) and (18) for heat exchange as well as (24) and (25) for mass exchange are derived. These equations take account of the interaction of heat and vapor currents through the boundary layer and their influence upon the heattransfer and diffusion coefficients, as well as of the Stefan flow. Formula (28) is derived, from which it may be seen that the temperature of the evaporating liquid does not depend on the Re-number of the flow round the wall. Fig. 3 shows the curves calculated from formula (28) for the relation between the temperatures of the liquid and the gas in the case in which the water evaporates in the air-current, and the experimental data are given. From this figure it may be seen that the experimental data agree with calculated ones. Formula (30) is written down for determining the efficiency of cooling. Fig. 4 shows the curves calculated from equation (30) for the dependence of the relative quantity of liquid on the gas-temperature in the evaporation of water from the inner surface of a cylinder tube through which hot air is passing. The temperatures and quantities of liquid determined from these equations

Card 2/3

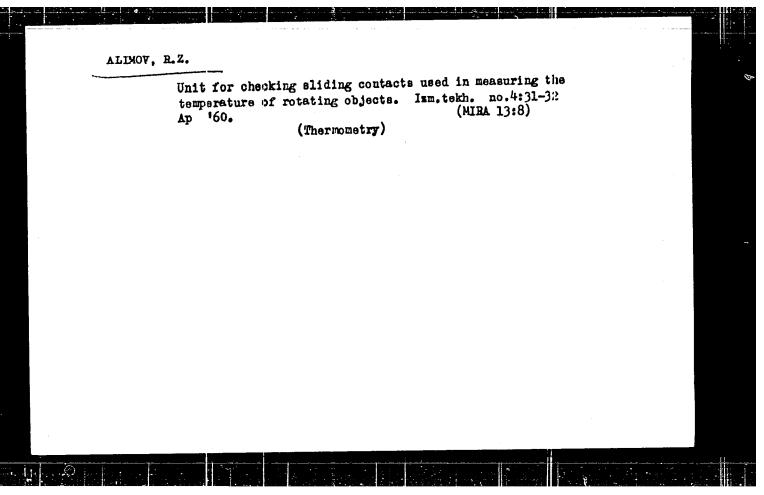
Heat and Mass Erchange in Cooling by
Evaporation of Surfaces Heated to High
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are compared in Fig. 4 with theoretical and experimental data obtained by other authors (Refs. 5,6,14) and those by O. Lyuts (Ref. 15).

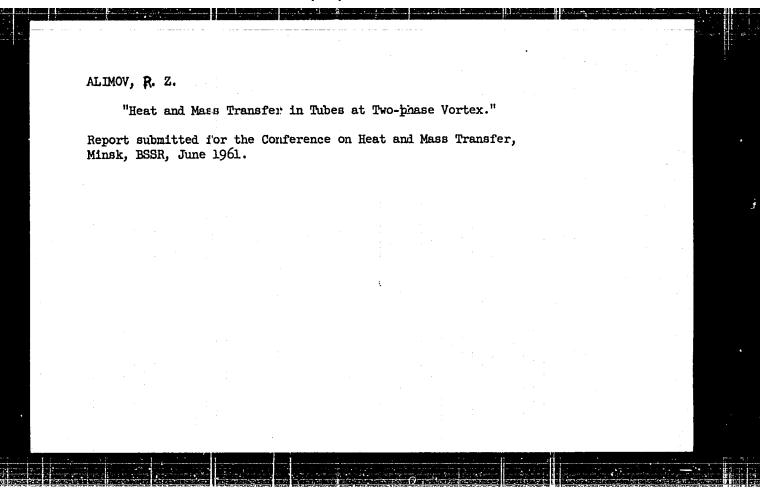
There are 4 figures and 16 references: 14 Soviet and 2 US.

ASSOCIATION: Aviatsionnyy institut, g. Kazan' (Aviation Institute, Kanan')

Card 3/3



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S/115/61/000/008/008/009 E194/E119

AUTHOR:

Alimov, R.Z.

TITLE 9

Graphical methods of calculating individual parameters of flowmeters with standard apertures

PERIODICAL: Izmeritel'naya tekhnika, no.8, 1961, 49-53

TEXT: The object of this article is to popularise two existing but little known graphical methods. The first of these was described in detail by R.H. Nilberg (Ref. 1: Ein Nomogramm für Blenden und Düsen. Archiv für technisches Messungen (ATM), 1958, Lieferung 269). He used the flow equation for a differential manometer flowmeter operating with standard apertures:

 $G = 0.01252\epsilon \alpha mD^2 \sqrt{\Delta PY}$  (1)

The second method uses a nomogram based on the equation of flow, and the relationship between the pressure drop in the constricting device,  $P_n$ , and m. From this nomogram the upper limit of the pressure difference of a differential manometer, and the pressure loss  $P_n$  are determined as a function of the parameter Card 1/2

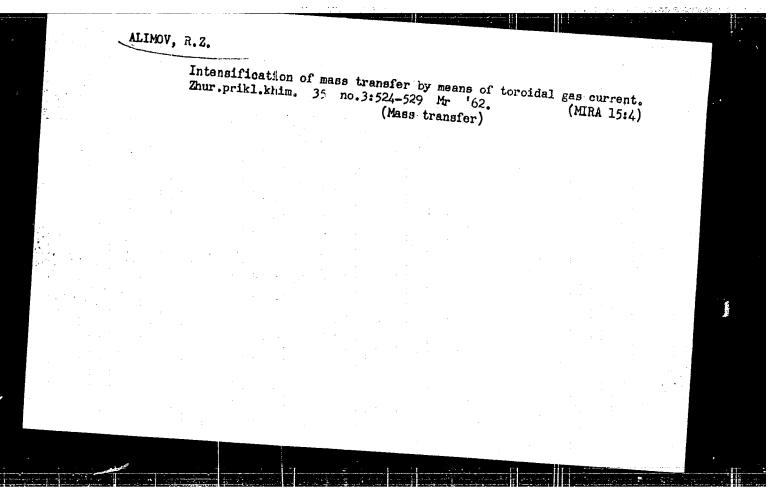
Graphical methods of calculating ...

S/115/61/000/008/008/009 E194/E119

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The parameter C is plotted against  $P_m$  (kg/cm²) for differential pressure manometer readings. This parameter C may be used to assess the value of the main parameters of a flewmeter with a limited value of pressure drop in the constricting device. The nomograms are simple to use, and may be used in combination. There are 3 figures and 2 references; 1 Soviet-bloc and 1 non-Soviet-blot.

Card 2/2



26.2257

3593/1

5/024/62/000/001/002/013 E195/E135

AUTHOR:

Alimov, R.Z. (Kazan')

TITLE:

The use of swirling two-phase flow for the purpose of intensifying convective heat and mass exchange

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Energetika i avtomatika, mo.1, 1962, 101-110

TEXT: The limitation of single-phase swirling flows for heat-exchange purposes has been apparent for some time. The use of swirling gas flows has not resulted in significant improvement in convective heat transfer, whilst liquids present the problem of bulk transportation with a consequent loss of energy. author carried out am experimental study of heat exchange properties of two-phase swirling flow. He succeeded in planting a film of water droplets on the internal wall of a heated vertical porcelain pipe (inside diameter 40 mm, length 1200 mm) carrying a swirling stream of air. Analysis of the results led

The use of swirling two-phase flow... S/024/62/000/001/002/013 E195/E135

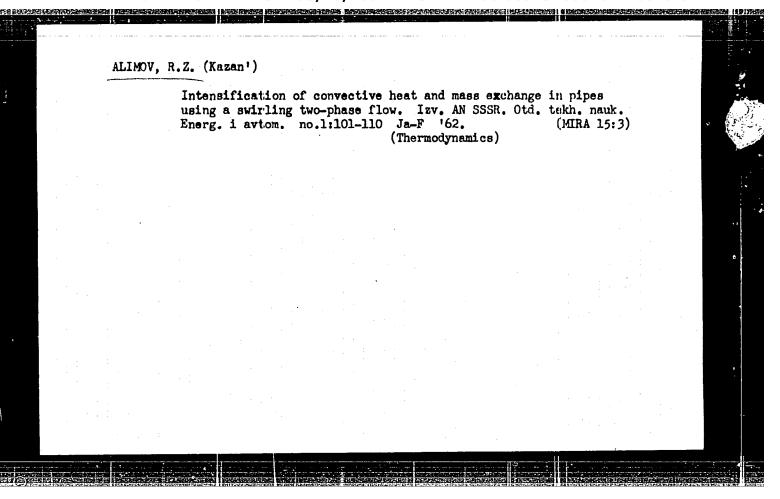
to the following conclusions. 1) By injecting liquid into a swirling flow of gas it is possible to produce thin, continuous and stable liquid films on the internal surface of a cylindrical pipe. 2) By varying the Reynolds number within the range  $2 \times 10^{4}$  -  $6 \times 10^{4}$  in the swirling flow, the Nusselt diffusion criterion can be increased to double that of a non-swirling flow; this indicates a considerable intensification of heat and mass transfer processes. 3) A heat-exchange coefficient of the order 2400-2900 kcal/m<sup>2</sup>/hr/°C was obtained for a heat-flow rate of 75000 kcal/m<sup>2</sup>/hr in this range of Reynolds number; this is 40-70 times higher than that for non-swirling flow and 8-20 times greater than that for a single-phase swirling flow: the total resistance, however, increases by a factor of 7. 4) Under comparable temperature and energy loss conditions, the use of single-phase swirling flow will result in a net gain of 2-2.5 times in heat transfer rate in comparison with non-swirling flow. The introduction of two-phase swirling flow would produce an additional gain of 3-20 times that of swirling one-phase flow. Finally, the author suggests that there is considerable scope Card 2/3

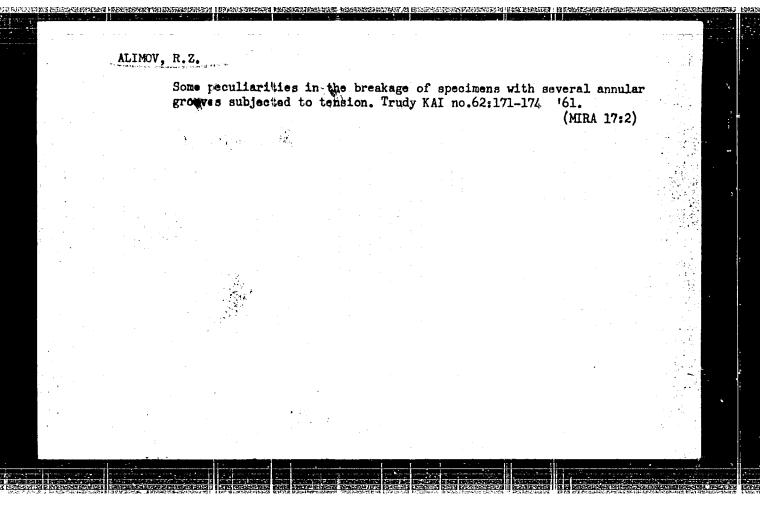
The use of swirling two-phase ...  $\frac{5/024/62/000/001/002/013}{E195/E135}$ 

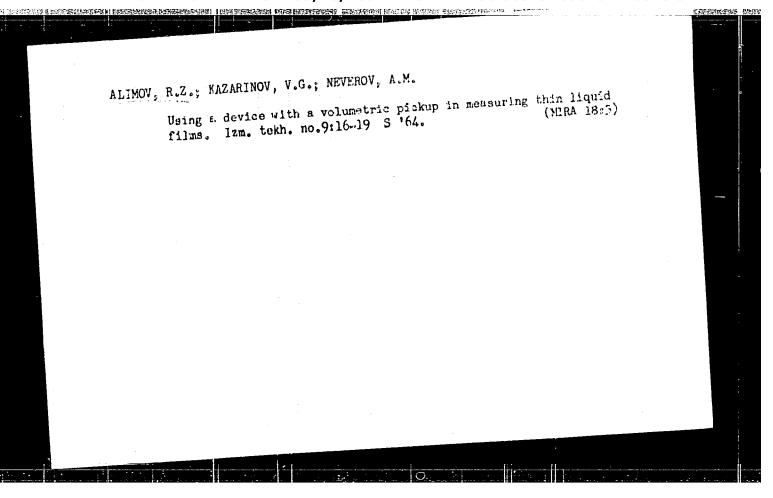
for an improvement in the design of swirl-producing devices, which would result in yet greater intensification of heat-exchange processes. This method has many technological applications, particularly in cooling highly heated surfaces. There are 9 figures.

SUBMITTED: February 2, 1961

Card 3/3







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ASD(a)-5/SSD/AFWL/AS ACCIESSION NR: AP	1044874	
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tating liquid	Doklady* v. 157, no. 6, 1964, 1314-1313	
TOPIC TAGS: rota chanics, Reynolds ABSTRACT: Thin cylindrical tubes be air stream. The aslits. The thin liques and represent the stream of the	ing liquid film, wave propagation in liquid film, hydrome- humber ayers of rotating liquid were produced on the inner surface of ayers of rotating liquid were produced on the inner surface of ayers of rotating liquid were produced on the inner surface of ayers of rotating liquid were produced on the inner surface of ayers of rotating liquid were produced on the inner surface of twisted a twisted a saccomplished by blowing air through tangential and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried away by the twisted air s and layer thus formed was carried awa	

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ACCESSION NR: AP 006301		
AUTHOR: Allmov, R. Z.	Gandidate of technical sciences)	
TITLE: Hydraulic resist	ance and heat and mass transfer 1 a vortex	
SOURCE: Teploenergetika	ho, 3, 1965, 81—85	
TOPIC TAGS: vortex flow	, hydraulic resistance, heat tran fer, mass	<b>C</b>
ABSTRACT: Hydraulic re	istance and heat and mass transfer at various air flow were investigated in a vortex tube	
yere maintained at 500	n 400C, respectively, and the art flow rate	
results in a string int	mification of heat and mass transfer, appar-	
ently caused by Low ac	distribution in the	
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ENT(1)/EIP(m)/ETO(t)/EPF(n)-2/ENO(m)/ENE(d)/ETO(m)-6/ENE(1) AP6012671 SOURCE CODE: UR/0170/66/010/004/0437/0446 AUTHOR: Alimov. R. Z. ORG: Aviation Institute, Kazan (Aviatsionnyy institut) Tal Had TITLE: Hydraulic resistance and heat transfer in a twisted flow SOURCE: Inzhenerno-fizicheskiy hurnal, v. 10, no. 4, 1966, 437-446 TOPIC TAGS: hydraulic resistance, fluid friction, heat transfer, centrifugal force, vortex tube, vortex flow ABSTRACT: The results are given of the experimental investigation of friction and heat mass transfer in cylindrical tubes. The diameter of the tubes ranged from 15.6 to 20.2 mm. Different vorticities were obtained by variation of the geometric parameter  $A_T$  defined by the relation  $A_T = F_T/F_t$ , where  $F_T$  is the cross-sectional area of the tube and Ft is the total cross-sectional area of the slots. To analyze the heat mass transfer, water was injected into the tubes. This was followed by deposition of water drops, due to centrifugal force, on the inside walls of the tubes, which resulted in a thin water-film covering the whole length of the tubes. Friction and heat mass transfer were found to be considerably higher in this flow than in an ordinary axial flow. Comparative analysis reveals the range of AT which corresponds to the minimum power supply. Orig. art. has: 4 figures and 8 formulas. [NT] SUB CODE: SUBM DATE: 19Jun65/ ORIG REF: 014/ OTH REF: 001 UDC: 536.244+532.501.312

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I. 26277-66 EWP(m)/EFF(n)-2/EWT(1)/ETC(f)/EWG(m)/EWA(d)/EWA(1) WW  ACC NR. AP6014070 SOURCE CODE: UR/0294/66/004/ti02/0238/0241		
ACC NR: AP6014070 SOURCE CODE: UR/0294/86/004/102/0236/0241		-1
AUTHOR: Alimov, R. Z.		
ORG: Kazan Aviation Enstitute (Nazanskiy aviatsionnyy institut)		
TITLE: Some characteristics of evaporative cooling by a swirling flow		1
SOURCE: Teplofizika wysokikh temperatur, v. 4, no. 2, 1966, 238-241		
TOPIC TAGS: heat transfer, evaporative cooling, film cooling, cooling rate		
ABSTRACT: The cooling of the inside wall of an externally heated cylindrical pipe by a water film evaporating in a swirling flow of air was studied experimentally.		
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thick was and 20 mm long which was electrically heated by a millitume outly		
(heating element) would around the tube. Water was injected into the tube, in which a swirling flow of air was maintained, at a rate sufficient to produce a continuous		
The many the incide company. The many transfer and Illm temperature variations		
along the tube length were measured. The obtained results show that the presence of a swirling flow results in a considerable increase in the rate of heat removal per		
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tance. This characteristic can be useful in cases where the removal of large quantities of heat by a limited amount of coolant is needed. The effect of film distitles of heat by a limited amount of coolant is needed.		
continuity on the heat transfer was also investigated. The results showed that the		
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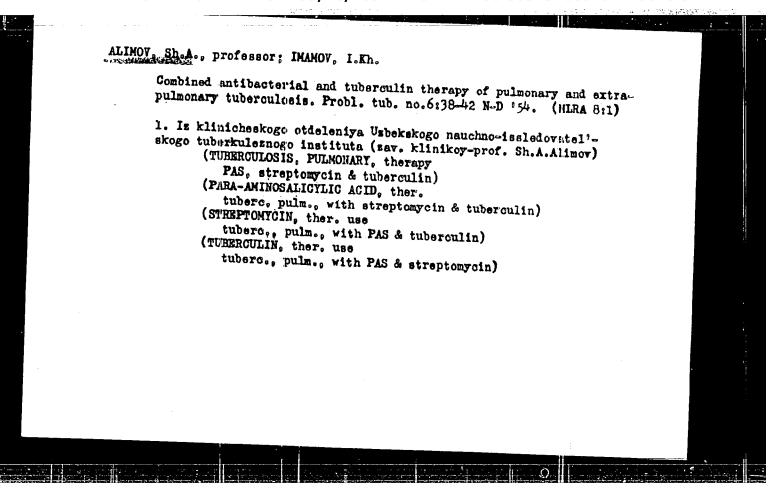
ALIMOV, S.; NAUMENKO, G.

Joint control. Fin. SSSR 22 no.8:72-74 Ag '61.

(MIRA 14:8)

1. Zamestitel' upravlyayushchego Stalingradekoy kontoroy
Gosbanka (for Alimov). 2. Zamestitel' zaveduyushchego
Stalingradskim obliinotdelom (for Naumenko).

(Stalingrad Province—Auditing)

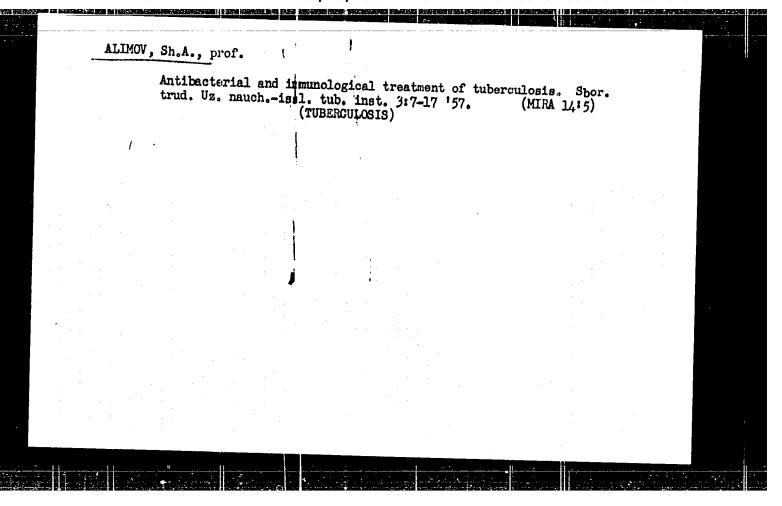


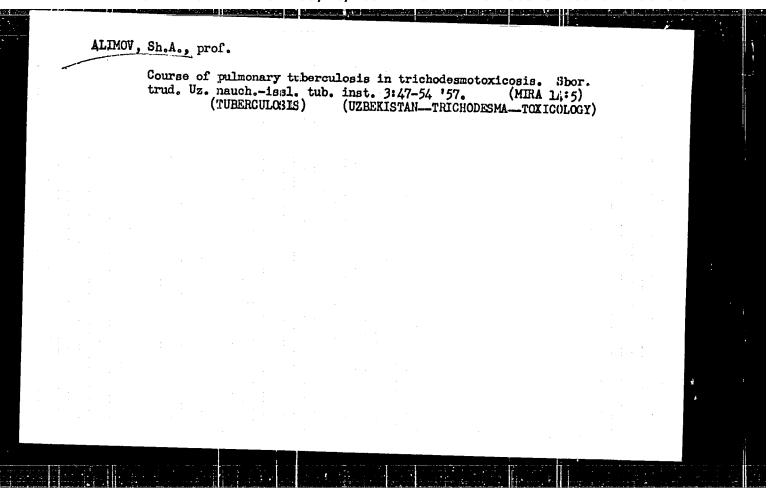
ALIMOV, Sh.A., doktor meditainskikh nauk.

Phthivazide in the therapy of pulmonary and non-pulmonary tuberculosis.

Sov.med.18 no.1:22-6 Ja '54. (MERA 7:1)

1. Iz klinicheskogo otdeleniya Uzbekskogo nauchno-isaledovatel'skogo tuberkuleznogo instituta. (Tuberculosis)





ALIMOV, Sh.A., prof.; ABDURASHITOVA, M.V.

Results of further observations on the therapeutic effectiveness of phthivazid. Sbor. trud. Uz. nauch.-issl. tub. inst. 3:65-69

157. (ISONICOTINIC ACID) (TUBERCULASIS)

(MIRA 14:5)

USSR/Pharmacology and Toxicology. Chemotherapeutic Preparations Antitubercular Drugs

V-7

Abs Jour : Ref Zhur - Biol., No 15, 1958, No 71292

: Alimov Sh.A., Azarnykh M.A.

Inst Title : Uzbekistan Scientific Research Tuberculosis Institute : Metazid in the Treatment of Patients Affected with Pul-

monary Tuberculosis

Orig Pub : Sb. tr. Uzb. n.-i. tuberk. in-t, 1957, 3, 76-82

Abstract: Forty-eight patients affected with various forms of pulmonary tuberoulosis were treated with metazid (M) (product of the condensation of isoniazid with formalin) in doses of 0.2-0.3 g. 3 times a day before meals, per os. For a course of treatment, 20-50 g. of M (in 5 patients up to 80 g.) were used. In the outcome of the treatment with M, an improvement of the general condition (normalization of temperature, abatement of cough, reduction of catarrhal symptoms in the lungs, slowing down of E.S.R., increase in weight) was observed

almost in all patients. In 6 out of 29 patients, bacteria

Card : 1/2

USSR/Pharmacology and Toxicology. Chemotherapeutic Preparations

V-7

Abs Jour : Ref Zhur - Biol., No 15, 1958, No 71292

disappeared from the sputum. In 29 patients, positive roentgenological shifts were noted. In patients with fibrocavernous forms, a resorption of the pyogenic membrane with thinning of the wall and a decrease of the size of caverns, and in small caverns even their complete closing, were observed. Side effects of M were insignificant and were expressed by headache, pain in the cardiac region, and in one patient the occurrence of leukopenia; after interruption of the treatment of 2-3 days, all these symptoms disappeared. As to effectiveness, M does not present advantages over phthivazid, and in single cases it is inferior to it. -- O.V. Petrova

Card

: 2/2

ALIMOY, Sh.A.; AZARNYKH, M.A.

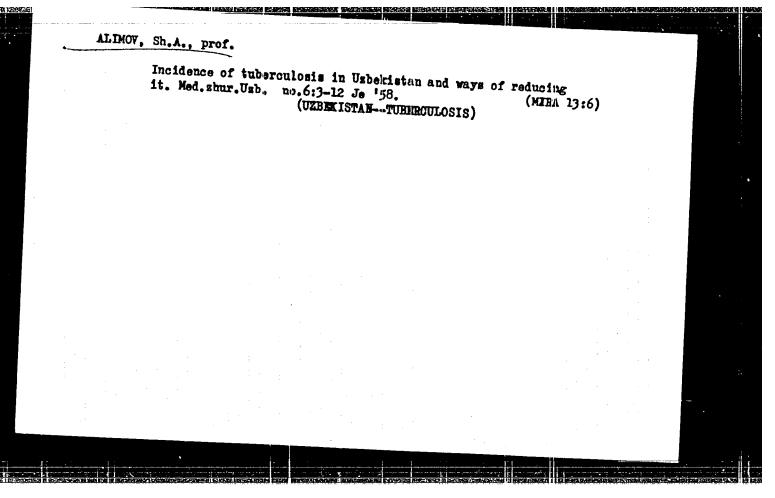
Matacide in the treatment of tuberculosis. Dokl.AN Uz. SSR no.

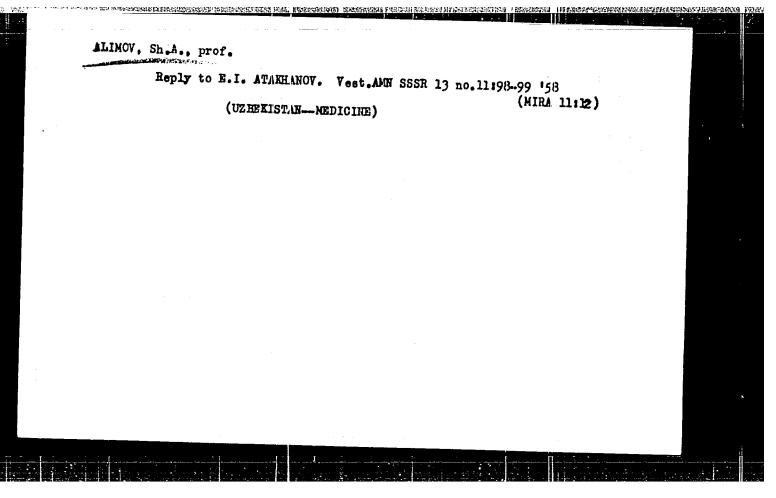
4:63-66 '57. (MIRA 11:5)

1. Uzbekskiynauchno-issledovatel'skiy tuberkuleznyy institut.

Predstavleno akad. AN UzSSR A.Yu. Yunosovym.

(Metacide) (Tuberculosis)





ALIMOV, Sh. A., prof.; VCIOKHYTANSKIY, A.M., kand. med. nauk; TESENKO, I.F.

Collective farm tuberculosis sanatoria in the Uzbek S. S. R. Probl.
tub. 36 no.8:3-5 '56. (MIRA 12:7)

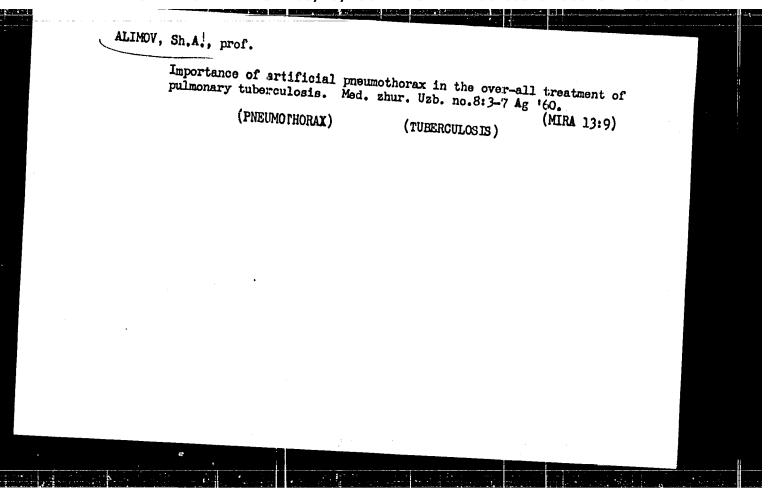
1. Iz Uzbekskogo nauchno-issledovatel'skogo tuberkuleznogo instituta
(dir. Sh. A. Alimor).
(UZBEKISTAN--TUBERCULOSIS--HOSPITAIS AND SANATORIUMS)

ALIMOV, Shakir Alimovich; SHRAMKOVA, G.A. red.; AGZAMOV, K., tekhn. red.

[Chemical aspects and therapy in pulmonary tuberculosis] Klinika i terapiia tuberkule:a legkikh. Tashkent, Gos.med.izd-vo M-va zdravookhraneniia UzSR, 1960. 146 p.

(TUBERCULOSIS)

(MIRA 14:6)



ALIMOV, Sh.A., prof.; AZAFNYKH, M.A.

Treatment of pulmonary tuberculosis with cycloserine. Med, zhur.
Uzb. no.1219-12 D 160.

1. 1z Uzbekakogo nauchno-issledovatel'skogo tuberkuleznogo instituta.

(TUBERCULOSIS)

(ISOXAZOLIDINONE)

ALIMOV, Sh.A.; AZARNYKH, M.A.

Effectiveness of metazide in the treatment of pulmonary tuberculosis.

Khim. i med. no.14:70-76 '60. (MIRA 14:12)

1. Klinicheskoye otdeleniye Uzbekskogo nauchno-issledovatel'skogo tuberkuleznogo instituta (dir. - prof. Sh.A.Alimov).

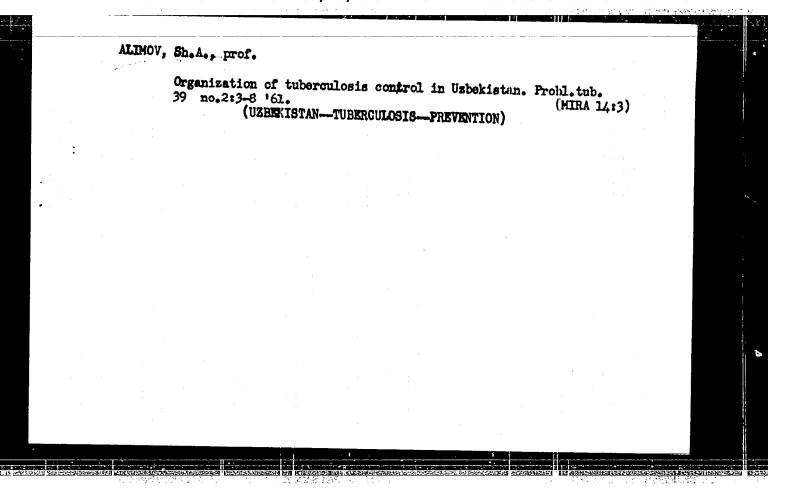
(TURERCULOSIS)

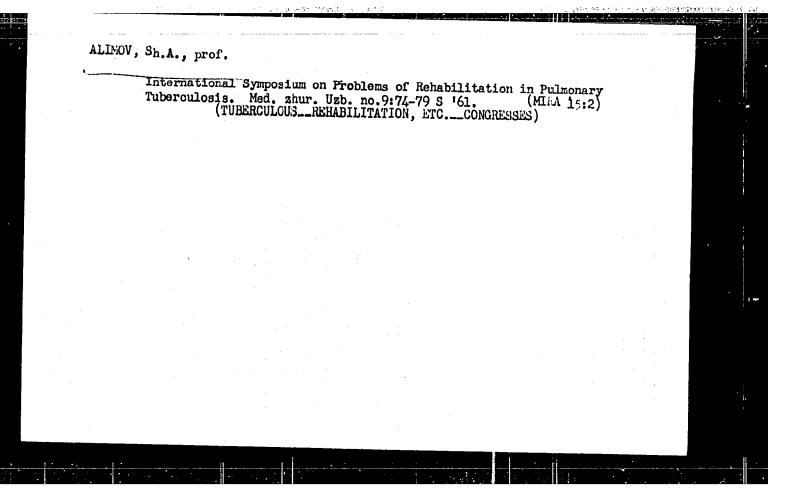
(METAZIDE)

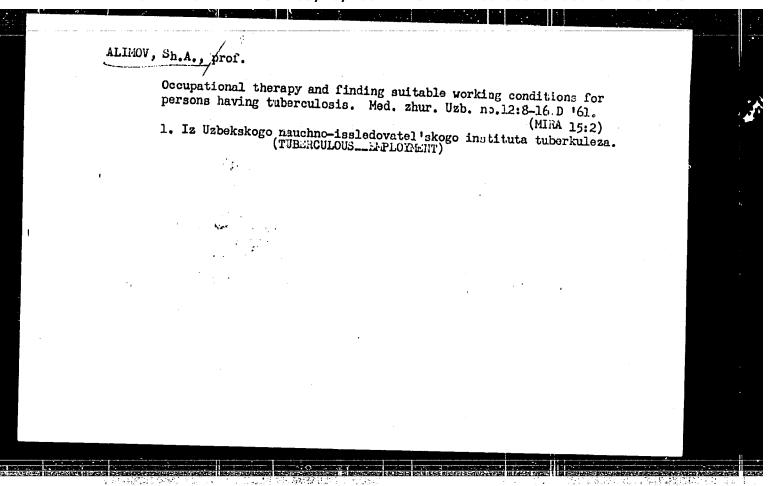
ALIMOV, Sh.A.; ANDREYEV, I.S.; ZYRINA, L.V.

Characteristics of the preparation of ZnS - Cu electroluminophors. Izv. AN Uz. SSR. Ser. fiz.-mat. nauk no.4:52-56 161. (MIRA 14:9)

1. Tashkentskiy gosuniversitet imeni V.I.Lenina.
(Luminescent substances) (Zinc sulfide)







ALIMOV, Sh. A., prof.

Sanatorium treatment of pulmonary tuberculosis using ergotherapy.
Probl. tub. no.2:11-14 '62. (MIRA 15:2)

1. Iz Usbekskogo nauchno-issledovatel'skogo instituta tuberkuleza.

(TUBERCULOSIS) (OCCUPATIONAL THERAPY)

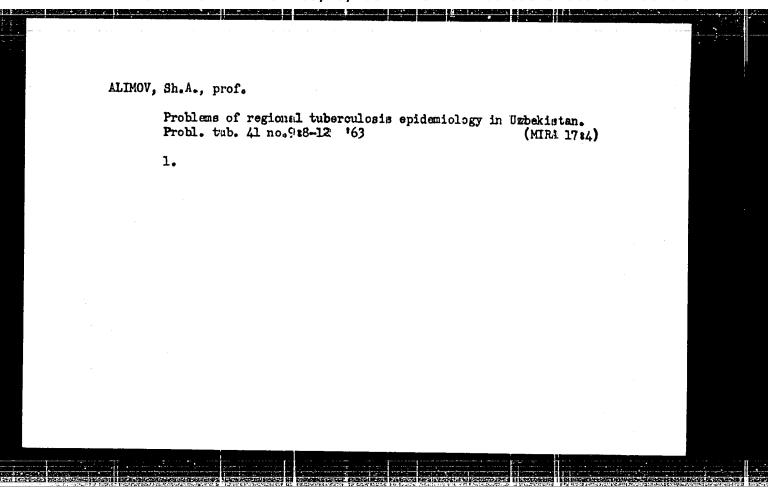
# ALIMOV, Sh.A.

[Problems in the prevention, treatment, and occupational rehabilitation of tuberculosis patients discussed at the 15th International Congress of Tuberculosis] Voprosy profilaktiki, terapii i trudoustroistva bol'nykh tuberkulezom na XV Mezhdunarodnom kongresse po tuberkulezu. Tashkent, Medgiz, UzSSR, 1960. 39 p. (MIRA 14:11) (TIBERCULOSIS)

ALIMOV, Sh.A.; AKHRARKHODZHAYEV, A.A.

Therapy of pulmonary tuberculosis in elderly persons. Trudy
TSIU 63;118-122 '63. (MIRA 17:9)

1. Kafedra legochnogo tuberkuleza Tashkentskogo instituta
usoverahenstvovaniya vrachey.



ALIGNARIA ARMANINA MANANGANINA MARANGANINA MANANGAN MANANG

SOV/137-59-12-26587

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 12, p 119 (USSR)

AUTHORS:

Alimov, S.I., Zhiryakov, N.I., Feygin, V.I.

V

TITLE:

An Automatic Programming Controller of the Heat Treating Process for

Tungsten and Molybdenum Rods ็ห

PERIODICAL:

Sb. materialov po avtomatiz. proiz. protsessov i dispetcherizatsii,

Nr 3, Moscow, 1958, pp 84 - 93

ABSTRACT:

The regulator is intended for automatic current control according to the given program in welding W and Mo rods. A "D-33" type ampère-meter of the ferrodynamic system serves as a unit to measure the intensity of the welding current through the transformer. The program is set-up by shaped cams rotated by a synchronous motor. The basic part of the controlling device consists of the "MRShch-PR" (or ERM-47) electronic unit of the regulator; the inductive coils are fastened on the master device (zadatchik) and the foil flag-indicators which can enter into the gaps

Card 1/2

between the coils are fastened to the pointer. Relay coils are switched

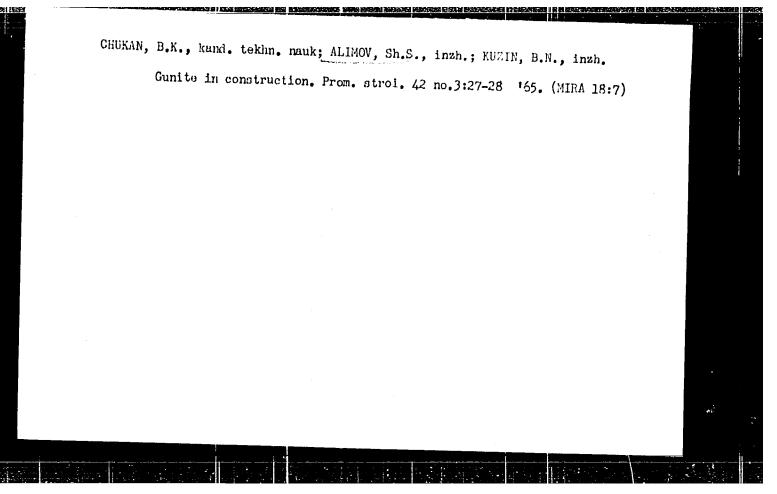
SOV/137-59-12-26587

An Automatic Programming Controller of the Heat Treating Process for Tungsten and Molybdenum Rods

into the electron unit outlet; they control the reversible contactors of the potential-controller motor. The controller makes it possible for one operator to attend 8 - 12 welding machines, raising efficiency by a factor of two and ensuring the strict maintenance of the set-up conditions for heating-up the rods.

A.S.

Card 2/2



ALIMOV. Stanislav Petrovich; LEYBSON, Mark Genrikhovich; KHODOVITS,
Pavel Iosifovich; SAVINA, Z.A., vedushchiy red.; POLOSINA,
A.S., tekhm.red.

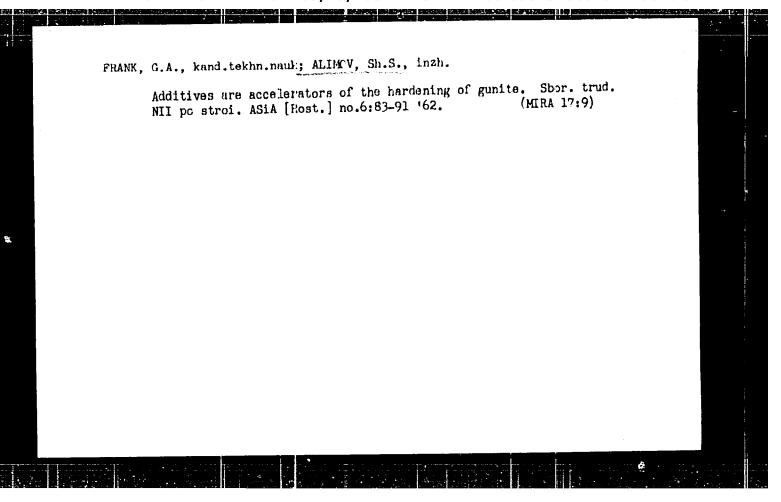
[Increasing oil recovery; Sakhalin oil workers' practice]
Intensifikatsita dobychi nefti; opyt sakhalinskikh neftianikov.
Moskva, Gos.nauchno-tekhm.izd-vo neft. i gorno-toplivnoi lit-ry,
1961. 71 p.

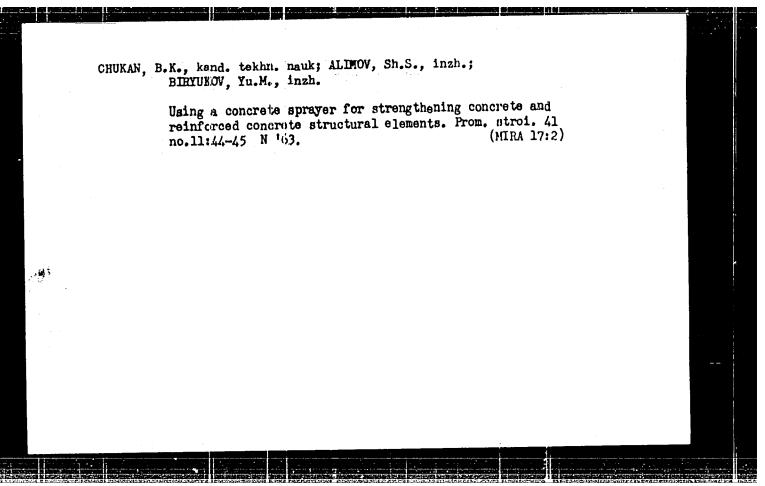
(Sakhalin—Oil fields—Production methods)

ZHELDAKOV, Yu.N., inzh.; ALIMOV, Sh.S., inzh.

Making fibrous silicate slate. Stroi. mat. 5 no.5:9-10 My '59,
(MIRA 12:8)

(Rostov--Roofing, Slate)





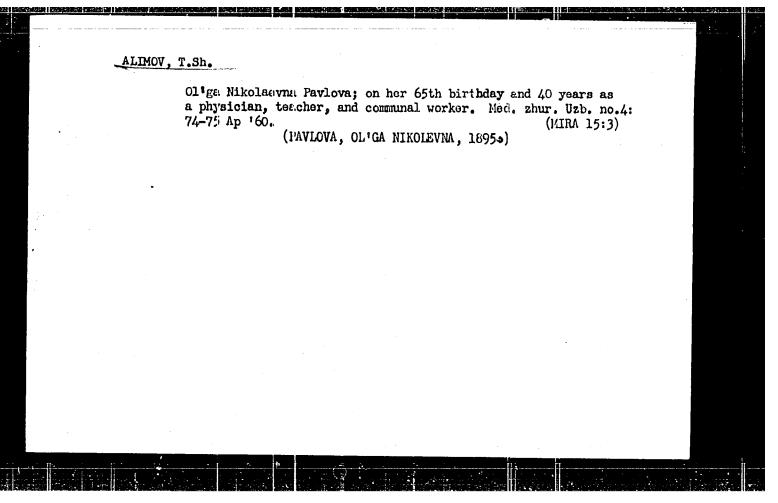
MIKHAYLOV, M.M.; MUKHAMEDOV, A.A.; RUDYUK, S.I.; ALIMOV, S.U.

High-temperature treatment as a means for increasing the productivity of thermal and chemical heat treatment processes.

Isv.AN Us.,SSR,Ser,tekh.nauk 7 no.2155-63 '63. (MIRA 16:4)

1. Tashkentskiy politekhnicheskiy institut.

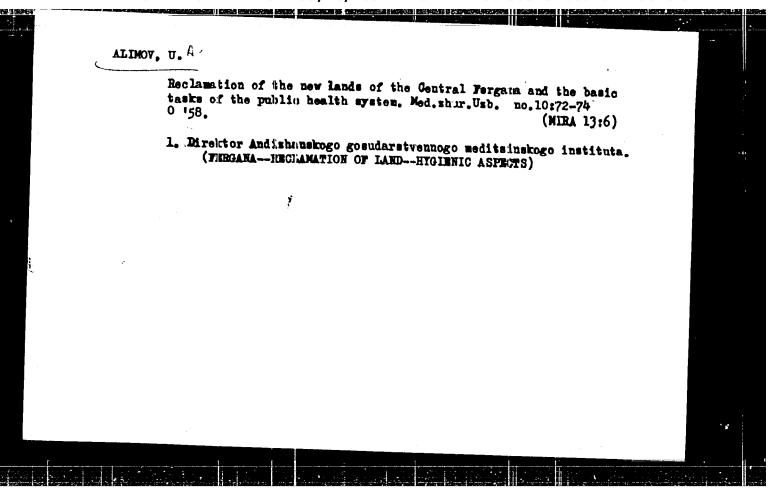
(Steel....Heat treatment)

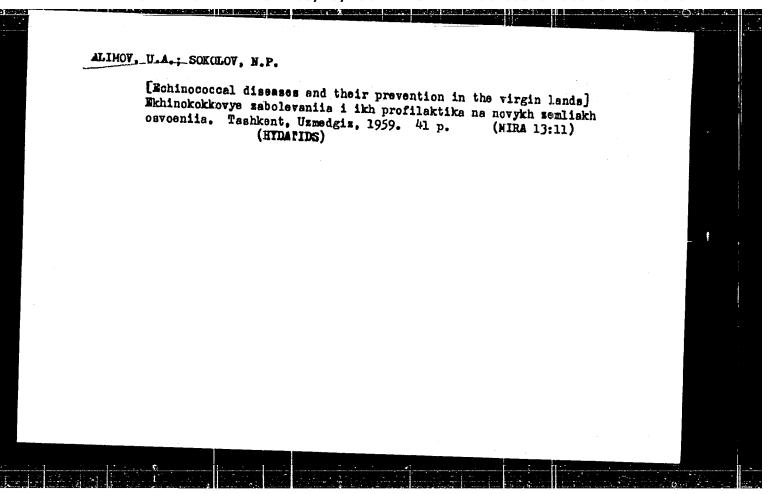


GRIGORYAN, N.A.; ALIMOV, T.U.

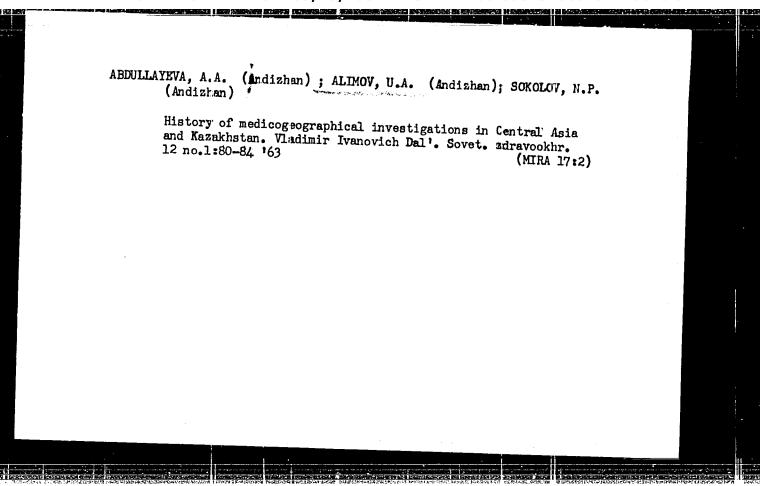
Two cases of amputatio interilio-abdominalis. Khirurgiia 41 no.4:138-139 hp '65. (MIRA 18:5)

1. Klinika gospital'noy khirurgii (zav. - prof. A.Ya. Yasnogorodskiy) Andizhanskogo meditsinskogo instituta.





ALIMOV, U. A., Cand. Med. Sci., — (diss), "Development of public health service in the Andizhansk Oblast and at the new lands of Central Fergan," Tashkent, 1961, 32 pp (Tashkent State Medical Institute) (KL-Supp 9-61, 188)



AUTHORS: Allimov, V.; Morozov, V. SOV-107-58-9-28/38 TITLE: A School Public Address System (Shkol'nyy radiouzel) PERIODICAL: Radio, 1958, Nr 9, pp 45 - 47 (USSR) ABSTRACT: The PA system for schools consists of a powerful amplifier with provisions for relaying speech, grammophone records, radio broadcasts or radio diffusion broadcasts. The output, depending on how many of the tubes in the output stage are used, is 10-12 w or 20-22 w. The amplifier is designed to power 2 feeder lines at 120 v for driving P-10 street loudspeakers, and 2 individual lines for driving normal loudspeakers. The individual lines would have a maximum load impedance of 60 ohms and could take 5-7 LS working on 15 v. The feeder lines have a maximum load impedance of 1,200 ohms and could take 1 speaker each with 20 w output, or one speaker between them at 10 w output. The amplifier consists of a 2-stage pre-amplifier, and a penultimate stage, transformer coupled with the push-pull output stage. Bantam tubes are used throughout. For microphone work both stages of the preamplifier are used. The push-pull output stage uses 4 tutes but by only using 2 of these the output can be de-Card 1/2 creased when desired. The power unit uses a 5Ta4S keno-

A School Public Address System

SOV-107-58-9-28/38

tron for full-wave rectification. The apparatus consumes 90 w for a 20 w output. An electron-tube output level indicator is built in and the amplifier is provided with a monitoring speaker with volume control. Details for the construction, alignment and operation of the PA system are given. There are 2 figures, 1 circuit diagram and 1 diagram.

1. Public address systems—Design 2. Public address systems—Performance 3. Public address systems—Instruction remarks

Card 2/2

ALIMOV, V., nauchnyy sotrudnik; VRANGEL', L., nauchnyy sotrudnik;

LEVINA, G., nauchnyy sotrudnik

An integrated series of plans for farm buildings and structures.

Na stroi. Ros. no.5:7-9 My '61. (MIRA 14:7)

1. Nauchno-issledovatel'skiy institut zhilishcha Akademii stroitel'stra i arkhitektury SSSR.

(Farm huildings—Designs and plans)

ALIMOV, V. A.

"The Nervous Apparatus and Argentophilic Substance of the Vermiform Appendage During Appendicitis (Data)." Cand Med Sci, Tashkent State Medical Inst, Tashkent, 1953. (RZhBiol, No 7, Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher SO: Sum. No. 556, 24 Jun 55

USSR COUNTRY General Problems of Fathology. Tamors. CATEGORY Comparative Oncology. Human Neoplasms. ABS. JOUR. 1 RZhBiol., No. 231958, No. 107149 AUTHOR Alimov, V.A. INST. A Myxofibrosarcoma of the Urinary Bladder in TITLE a Two-Year-Old Child. Za sots. Zdravookhr. Uzbekistana, 1956, No. 4, ORIG. PUB. 89-82 The clinical picture and anatomopathological ABSTRACT data of the autopsy are described in detail.Histologically, the tumor consisted of polymorphous cells with basophilic protoplasma and brightly staining nuclei of various forms. The stroma was formed by fine fibrous tissue with myxomatous degeneration. The tissue of the tumor on section had the appearance of fish flesh. The histological diagnosis: myxofibrosarcoma of the urinary bladder with renal metastases. Card: 1/1

ALIMOY, V.A., kand.med.nank; GAYDOVA, Ye.S., kand.med.nauk:

Mortality from tumors as shown by data of the Autopsy Department of the Clinic of the Tashkent Medical Institute from 1946-1955. Med.zhur.Uzb. no.6:35-39 Je 158. (MIRA 13:6)

1. Iz kafedry patologicheskoy anatomii (sav. - prof. G.N. Terekhov) Tashkentskogo gosudarstvennogo meditsinskogo instituta.

(CANCER--MORTALITY)

ALIMOY, V.A., kand.wed.nauk

Rare case of invagination of the large intestine in typhoid fever in an eleven months-old child. Med.zhur.Uzb. no.5:
64-66 My 156. (MIEA 13:6)

1. Iz kafedry patelogicheskoy anatomii (zav. - prof. G.M. Terekhov) Tashbentskogo gosudarstvennogo meditsinskogo instituta.

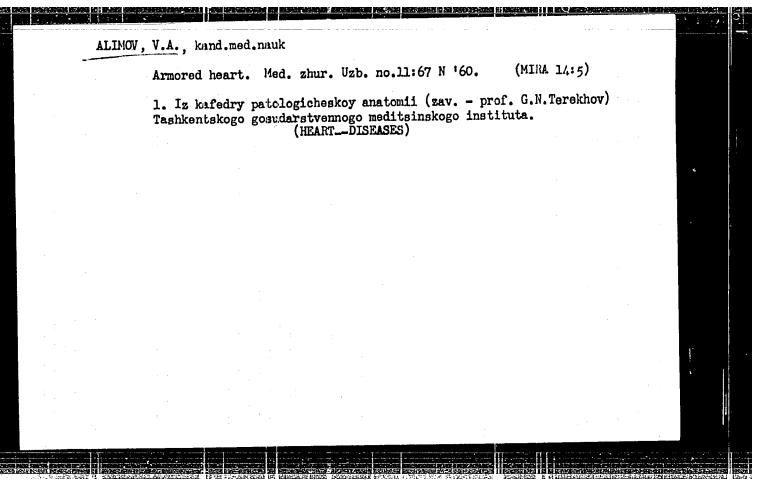
(INTESTINES--INTUSSUSCEPTION) (TYPHOID YEVEN)

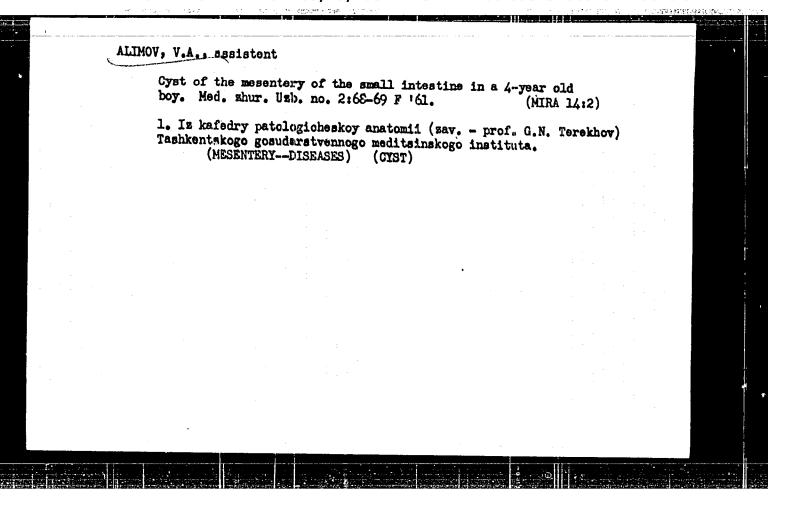
ALIMOV, V.A., kand.med.nauk

energi en l'entrementation de la comparation de la principal de la comparation della comparation della

Primary cancer of the liver in a three-year old child. Med.zhur.Uzb. no.1:80-81 Ja 159. (MIRA 13:2)

1. Iz kafedry patologicheskoy anatomii (zaveduyushchiy - prof. G.N. Terekhov) Tashkentskogo gosudarstvennogo meditsinskogo instituta.
(LIVER--CANCER)





ALIMOV, V.A., ussistent; POLYAKOVA, G., student; MANULKIN, A., student; MATUEYEV, S., student

Atherosclerosis according to autopsy data of clinics of the Tashkent State Medical Institute collected during 12 years (1949-1960). Med. zhur. Uzb. no.4:51-54 Ap '63.

(MIRA 17:4)

1. Iz kafedry patologicheskoy anatomii (zav. - prof. G.N. Terekhov) Tashkentskogo gosudarstvennogo meditsinskogo instituta.

ALIMOV, V.A.; MAGHUPOVA, M.A.

Histomorphology of the organs of laboratory animals after the injection of haplophylidine. Uzb. blol. zhur. 7 no.4:37-39'63 (MIRA 17:24)

1. Institut khimii rastitel'nykh veshchestv AN UzSSR.

VAVILOVA, M.P.; ALIMOV, V.A.

Some pathomorphological changes in experimental leishmaniasis in Cricotulus auratus infected with the Central Asian strains of Leishmania canis and Leishmania tropica major. Med. paraz. i paraz. bol. 32 no.61648-655 N-D '63 (NIRA 18:1)

1. Iz Tushkentskogo nauchno-issledovatel'skogo instituta vaktsin i syvoratok.

MAGRUFOV, A.I.; KASYMKHODZHAYEV, E.S.; ALIMOV, V.A.

Clinical and anatomical characteristics of policymelitis. Shor,nauch.
trud.TashGMI 22:360-370 '62. (MIRA 18:10)

1. Kafedra patologicheskoy anatomii (zav. - prof. G.N.Terekhov)
Tashkentskogo gosudarstvennogo meditsinskogo instituta i 3 detskoy
infektsionnoy boll'nitsy Tashkentskogo goredskogo otdela zdravcokhraneniya (glavnyy vrach A.P. Ndaleva).

DORMENKO, Vladimir Vladimirovich; MAKAHOYA, T.I., retsensent, ALHGY, V.D., retsensent; spetsredektor; KOSSOVA, O.N., redaktor; YAROV, R.M., tekhnicheskiy redaktor

[The production of frosen fish fillets] Proisvodstvo moroshenogo rybnogo file. Moskve, Pishchepromizdat, 1956, 42 p. (MERA 10:2)

(Fish, Frosen)

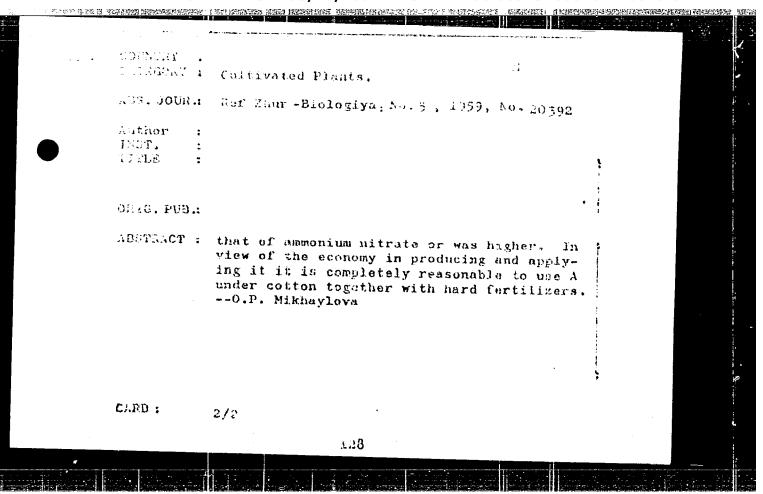
SHAPOVALOV, S.I., dotsent, kand. tekhn. nauk; STYCHINSKIY, L.P., inzh.;
ALIMOV, V.I., inzh.

Effect of patenting wire rod from the rolling temperature on the mechanical properties of wire. Stal' 25 no.6:570-572 Je '65.

(MIRA 18:6)

1. Donetskiy politskhnicheskiy institut i Makeyevskiy metallurgicheskiy zavod.

	One tryated Diames, Commercial, Clotherous,		
	Snaar-Tenritor.		
AeB. Jouic:	201 Shup Shalegiya 5 , 1920, 80, 20392		
AUTHOR :	Skryanin, F.A.; Akuhurina, N.A.; Alimov, V.Z.		
	Several Proporties of Ammoniate and Its	1	!
	Effectiveness.		, :
orig. Pub.:	V. sb. Ref. nauchno-issled. rabot po khlop-	•	
	kevodstru. Teshkant, AN UzSSR, 1957, 193-198	:	
ABSTARCT :	Experiments conducted by the Academy of	<b>:</b>	α,
	Sciences Uzbek SSR in Tashkentskaya Oblast in 1956 have shown that ammoniate (A) was		
	nitrified under laboratory conditions by		ر
	70% in 13 days, under field conditions by		
	nearly totally within less than 12 days. There is thus no cause to apply A fractional		
	ly under the fall plowing. When placing the		
	entire annual rate of A during vegetation of		
•	the cotton, its effectiveness either equalle	d.	
٠.			
CARD:	1/2		,
			·



Country : USSR J Category: Sail Science. Mineral Fertilizers.

Abs Jour: RZhBiol., No 13, 1958, No 82114

Author : Akchurina, N.A.; Alimov, V. Z.; Skryabin, F.A.

Inst : Inst of Agriculture, Uzbek SSR

Title : Characteristics and Effectiveness of Liquid Ammoniate

Fertilizer.

Orig Pub: Sots. s.kh. Uzbekistana, 1957, No 3, 21-25.

Abstract: In 1956 the Institute of Agriculture of the Academy of Sciences Uzbek SSR established by laboratory, vegetative,

field, and industrial experiments the expediency of the application of ammoniate, the preparation of which is 25-40% cheaper than the preparation of solid fertilizer. By placing full rates of N in the vegetation period, the ammoniate increased the harvest of cotton wool

Card: 1/2

1-2

Country: USSR
Category: Soil Science. Mineral Fertilizers.

Abs Jour: RZhBiol., No 18, 1958, No 82114

(brand 108-f) 7% in comparison with Naa. The process of nitrification of ammoniate was thoroughly completed in the soil on the 12th day, and the nitrate content of N in the soil was higher than with the application of Nua. Applying only one part of the ammoniate under the plowing will not significantly increase the harvest.

-- V.D Astaf'yeve

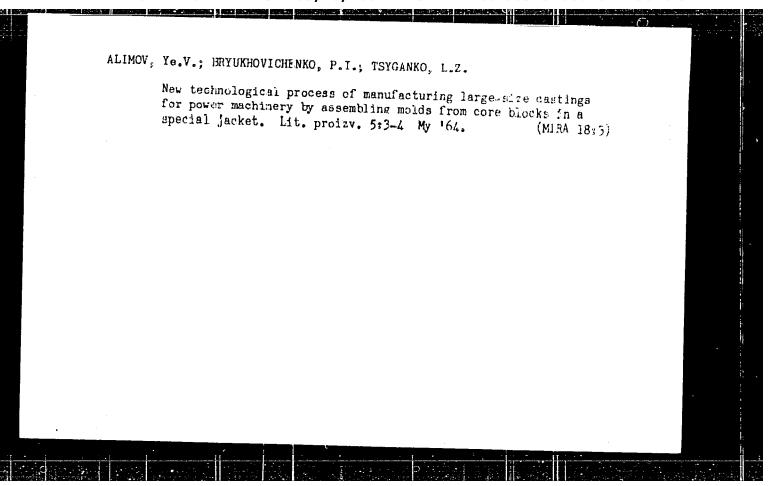
Card : 2/2

ALIMOV, Yevgeni; Vladimirovich; GENERSON, Bella Isaakovna;

FILITO'ICH, K.A., red.

[Selection of the optimum technological process for the manufacture of fourdry molds and cores for unit and small-lot production] Vybor optimal'nogo tekhnologicheskogo processessa :zgotovleniin liteinykh form i sterulmei pri individual'nom i melkoseriinom proizvodstve. Leningrad, 1965.

[MIRA 18.7]



24(3) 30V/56-35-6-24/44 AUTHORS: Skrotskiy, G. V., Alimov, Yu. I. Commence of the state of the st Ferromagnetic Resonance in a Circularly Polarized Electro-TITLE: magnetic Field of Arbitrary Amplitude (Ferromagnitnyy rezonans v polyarizovannom po krugu elektromagnitnom pole proizvol'noy amplitudy) Zhurnal eksperimental noy i teoreticheskoy fiziki, 1958, PERIODICAL: Vol 35, Nr 6, pp 1481-1484 (USSR) ABSTRACT: It is the aim of the present paper to analyze the exact solutions of the equations of motion of magnetization, viz. of the equation of the Bloch (Blokh)-type  $\vec{M} = \gamma \left[ \vec{MH} \right] + (\chi_0 \vec{I} - \vec{M})/\tau$  as well as of the Landau-Lifshits equations (Ref 1)  $\vec{m} = \gamma \left[ \vec{MH} \right] + \alpha \left[ \vec{m} \vec{m} \right]$ ,  $\alpha < 0$ , where  $\vec{m} = \vec{M}/M_g$ and  $\vec{H} = \vec{H}_0 + \vec{h}$ . In the introduction, the respective experimental investigations carried out by Damon (Demon) (Ref 2), Bloembergen and Wang (Blumbergen and Vang) (Ref 3), as well as the theoretical investigation by Suhl (Sul) (Ref 1) are discussed in short. The present paper investigates the solu-Card 1/2 tions of the aforementioned equations in a circularly polarized

Ferromagnetic Resonance in a Circularly Polarized Electromagnetic Field of Arbitrary Amplitude

radio-frequency field of arbitrary amplitude as well as the part played by the paraprocess in ferromagnetics in strong radio-frequency fields. The mathematical treatment of the equations is carried out in a system of coordinates rotating in the  $\hat{H}_0$ -direction with the frequency of the radio-frequency field, in which the two equations assume the form  $\hat{R}_0 = \hat{R}_0 = \hat{R}_$ 

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnic Institute)

SUBMITTED: June 23, 1958

Card 2/2

S/141/59/002/06/006/024 24.2200 **AUTHORS:** Ryzhkov, V.M., Skrotskiy, E032/E314 Alimov, Yu. I Phenomenological Theory of Free Precession of the Magnetic TITLE: Moments of Atomic Nuclei Izvestiya vysshikb uchebnykh zavedeniy, Radiofizika, PERIODICAL: 1959, Vol 2, Nr 6, pp 884 - 891 (USSR) ABSTRACT: A discussion is given of the conditions necessary to obtain the free precession of the nuclear magnetization vector of a specimen in the Packard-Varian method (Ref 2). The Packard-Varian method consists of the following. The specimen, which has a relaxation time of the order of a second, is magnetized by a sufficiently large auxiliary field  $H_{\Omega}$ , perpendicular to the weak switched off, the magnetization vector M precesses about with an angular velocity  $\omega = \gamma h_0$ . The coefficient  $\gamma$  is practically equal to the gyromagnetic ratio of the nuclei under investigation. In practice, the most important cases are those in which transient processes Card1/5

80125

S/141/59/002/06/006/024

Phenomenological Theory of Free Precession of the Magnetic Moments of Atomic Nuclei

associated with the switching-off of the auxiliary field are damped out during a period of time which is considerably smaller than the relaxation time for the system of nuclear spins. In that case, the relation between the magnetization vector M and the field H is given by Eq (1), which describes the motion of the magnetization vector during the transient process. the transient process is completed and when only the field h remains, the magnetization vector precesses freely, the appropriate equation being Eq (2). The latter equation was obtained in the previous paper by one of the present authors (Ref 12). When the transverse and longitudinal relaxation times are equal  $T_{\parallel} = T_{\downarrow} = \mathcal{T}$ , the solution of Eq (2) is given by Eq (3). approach to the problem enables one to consider independently the effect of the switching-off of the auxiliary field on the initial precession amplitude and

Card2/5

8013

s/141/59/002/06/006/024

Phenomenological Theory of Free Precession of the Magnetic Moments

the characteristics of the damping of the free precession signal. It is shown that when the frequency of the transient process w is considerably greater than the precession frequency in the measured field h, the

transient process has practically no effect on the initial amplitude of the precession signal even in the absence of damping. When the frequency of the transient process  $\omega$  is smaller than the precession frequency, the transient process will have no effect on the initial amplitude of the precession signal only if it is heavily damped. In particular, if the auxiliary field is aperiodic ( $\omega = 0$ ), the damping constant should be considerably greater than the precession frequency (Eq 6). A further effect considered is that of the influence of non-uniformity in the measured field on the damping of the free procession signal. Experiments on cylindrical specimens have shown that the effect of the norminformity in the magnetic field has a more complex nature than was

Card3/5

80125 \$/141/59/002/06/006/024

Phenomenological Theory of Free Precession of the Magnetic Moments of Atomic Nuclei

supposed by Waters and Phillips (Ref 16). As a result of the superposition of the magnetic moments of different elements of volume in the specimen, all of which have different precession rates, additional maxima appear in the signal. The effect of non-uniformity can be neglected provided  $\gamma GR \uparrow I < I$ , where R is the radius of the

specimen (Figure 3). For example, for a cylindrical specimen of distilled water for which the diameter is 10 cm, the relaxation time is 3 sec and

 $\gamma = 2.67 \times 10^{-1}$  sec<sup>-1</sup> o<sup>-1</sup>, the non-uniformity may be neglected provided G is less than 2.5 x 10<sup>-0</sup> Oe cm<sup>-1</sup> Figure 5 shows typical free precession signals for

distilled water for  $G = 6.1 \times 10^{-5}$  and  $4.2 \times 10^{-5}$  Oe cm<sup>-1</sup> respectively. The distance between the minima in the signal was found to be in good agreement with the calculations given in Ref 16. There are 5 figures, 1 table and 19 references, 8 of which are Soviet and 11 English.

Card4/5

Phenomenolof Atomic	ogical Theor Nuclei	y of Free	80125 S/141/5 Precession3	9/002/06/0 14 of the Mag	006/024 netic M	oments	
ASSOCIATIO	N: Ural'sk Polytechnic	iy politek al Imstitu	hnicheskiy te)	institut (	Ural.	4	
	June 29, 19					•	
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Card 5/5							
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16.9500

S/141/59/002/06/014/024

AUTHOR: Alimov, Yu.I. E192/E382

TITLE: Overall Stability of the Family:

LE: Overall Stability of the Equilibrium State of Relay-type 

Q Control Systems

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 6, pp 957 - 966 (USSR)

ABSTRACT: The system considered is described by the following operatorial equations:

$$Q(p)\sum_{\sigma} (p) = R(p)Y(p);$$

$$Y(p) = -L\{k_pf(\sigma)\};$$

$$f(\sigma) = sgn \sigma ; k_p > 0.$$
(1)

The transfer function of the linear system is given by Eq (2), where the coefficients a and b are constants which satisfy Eqs (3). The real parts of all the roots of Eq (4) are negative. The differential stability criteria for Eqs (1) were found by a number of authors (Refs 1-3). Cardl/4 In the following an attempt is made to determine the

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criteria of the overall stability of the system. The method employed in the analysis is similar to that of Malkin (Ref 5). Further, in the analysis it is assumed that the system fulfils the conditions defined by Eqs (5). It is shown that Eqs (1) can be written as Eqs (6), where X and F are defined by Eqs (7). The Lyapunov function V for Eqs (6) and (7) is constructed. This is defined by Eqs (24), where the components of the functions are expressed by Eqs (20) and (21). In its final form the Lyapunov function can be written as Eq (28). The stability criteria can now be defined on the basis of the Lyapunov theorem. This states that if all the roots of the characteristic equation:

$$dx_{i}/dt = \sum_{s=1}^{n} p_{is}x_{s}$$
 (i = 1, ..., n) (29)

have negative real parts, then independently of  $\mathbb{V}_1$  (Eqs 22), there exists only one  $\mathbb{V}_1$  of the same order

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