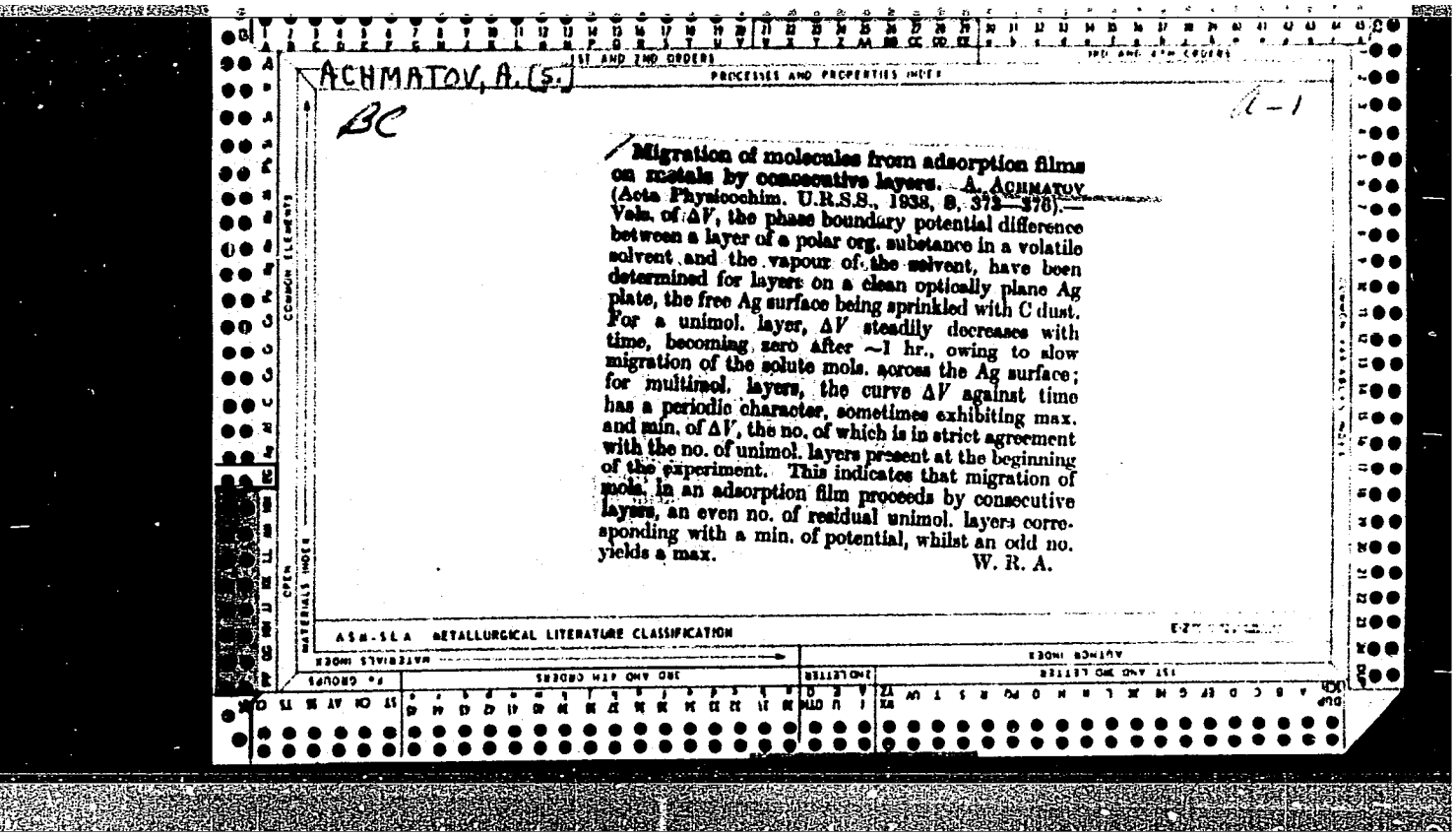


ACHMATOV, A. (S.)

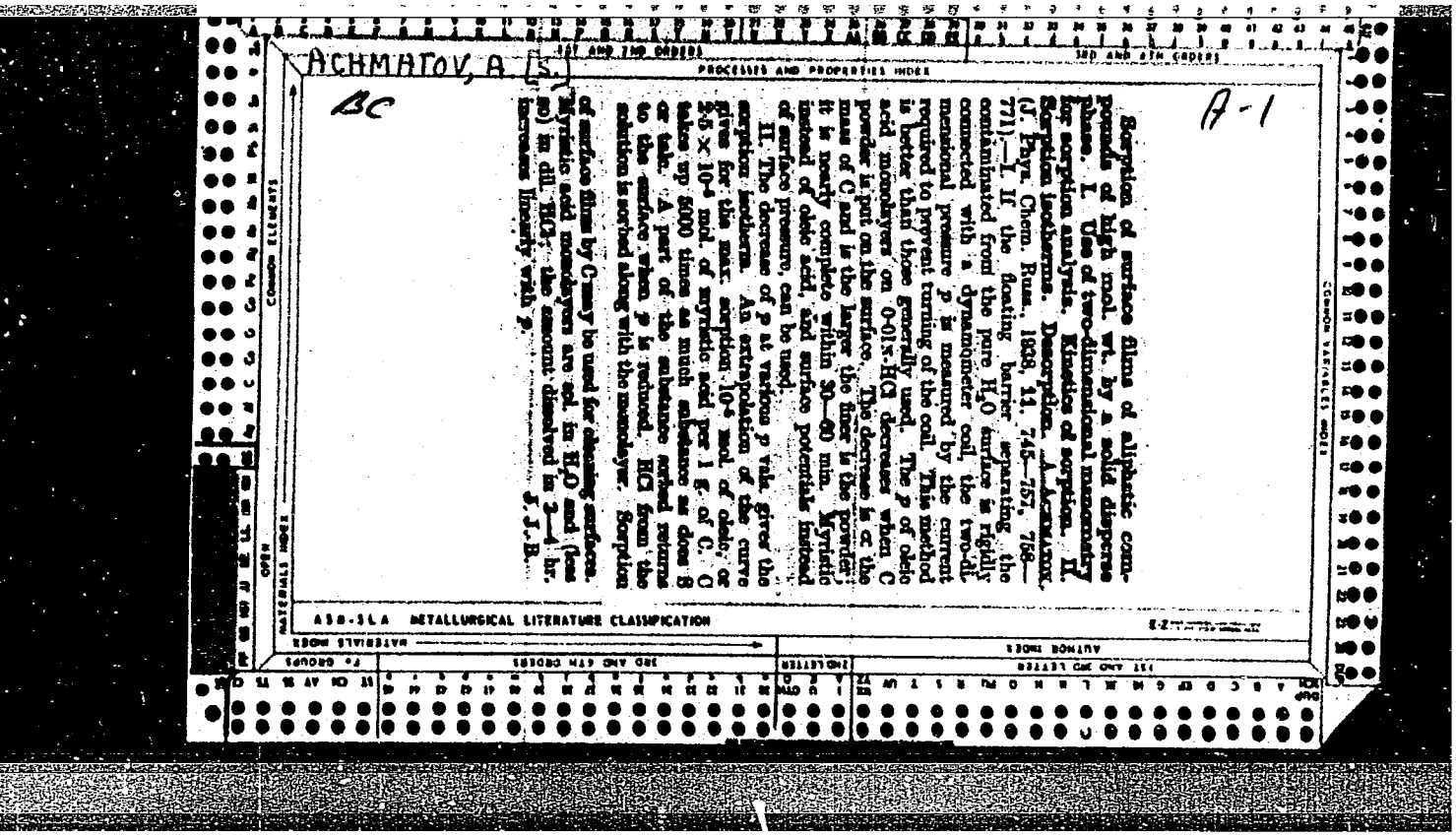
BC

A-1

Migration of molecules from adsorption films on metals by consecutive layers. A. ACHMATOV (Acta Physicochim. U.R.S.S., 1938, 8, 373—378).—Vels. of ΔV, the phase boundary potential difference between a layer of a polar org. substance in a volatile solvent and the vapour of the solvent, have been determined for layers on a clean optically plane Ag plate, the free Ag surface being sprinkled with C dust. For a unimol. layer, ΔV steadily decreases with time, becoming zero after ~1 hr., owing to slow migration of the solute mols. across the Ag surface; for multimol. layers, the curve ΔV against time has a periodic character, sometimes exhibiting max. and min. of ΔV, the no. of which is in strict agreement with the no. of unimol. layers present at the beginning of the experiment. This indicates that migration of mols. in an adsorption film proceeds by consecutive layers, an even no. of residual unimol. layers corresponding with a min. of potential, whilst an odd no. yields a max.

W. R. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



ACHMATOV, A. [illegible]

BC

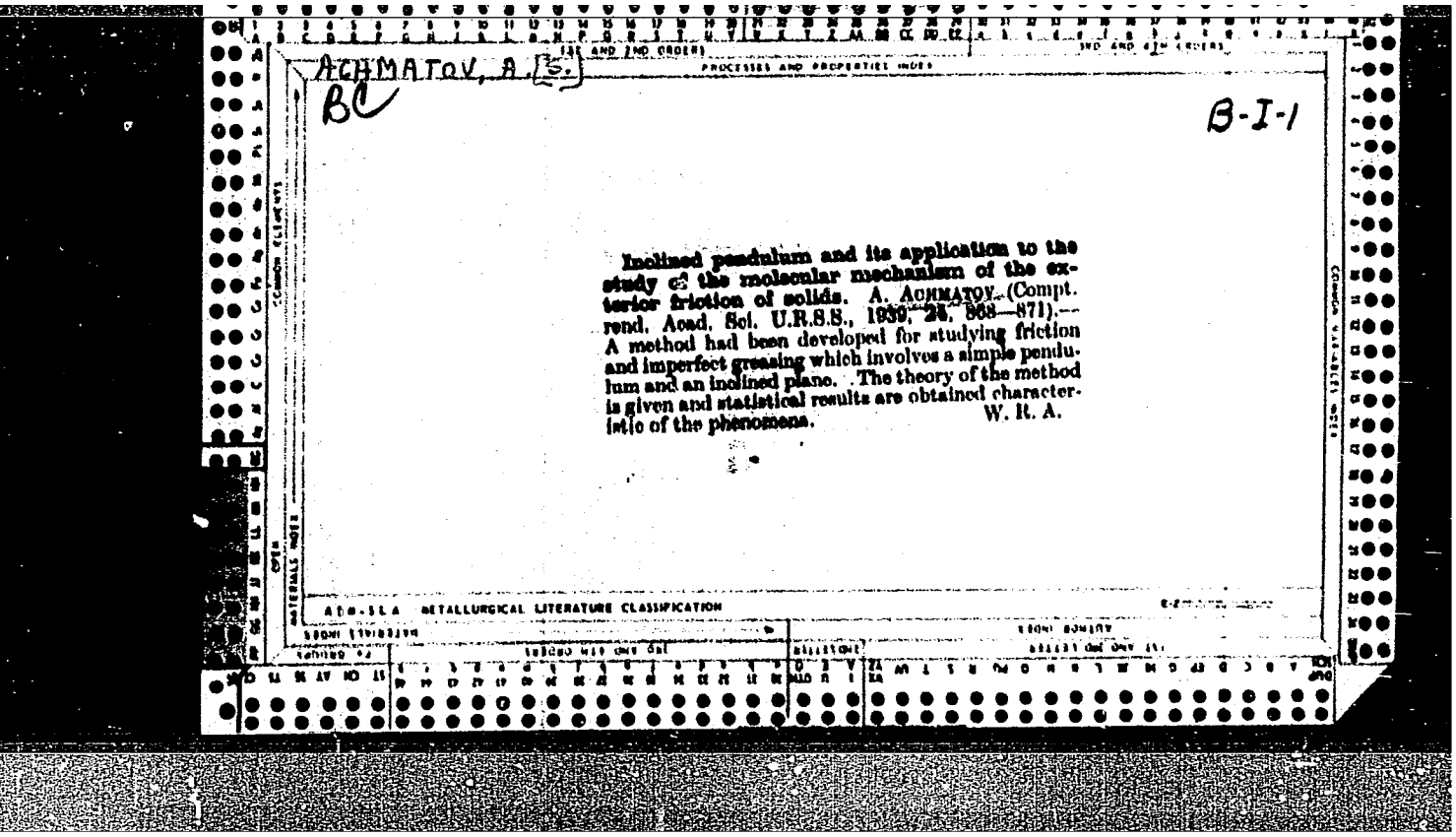
A-1

PROCESSES AND PROPERTIES INDEX

Sorption of surface films of aliphatic compounds of high mol. wt. by a solid dispersed phase. I. Use of two-dimensional manometry for sorption analysis. Kinetics of sorption. II. Sorption isotherms. Description. A. Achmatov. (J. Phys. Chem. Russ., 1938, 11, 745—757, 766—771).—I. If the floating barrier separating the contaminated from the pure H_2O surface is rigidly connected with a dynamometer coil, the two-dimensional pressure p is measured by the current required to prevent turning of the coil. This method is better than those generally used. The p of oleic acid monolayers on 0·01N-HCl decreases when C powder is put on the surface. The decrease is $\propto$ the mass of C and is the larger, the finer is the powder; it is nearly complete within 30—60 min. Myristic instead of oleic acid, and surface potentials instead of surface pressure, can be used.

II. The decrease of p at various p vals. given the sorption isotherm. An extrapolation of the curve gives for the max. sorption 10^{-8} mol. of oleic, or $3{\cdot}5 \times 10^{-4}$ mol. of myristic acid per 1 g. of C. C takes up 5000 times as much substance as does S or talc. A part of the substance sorbed returns to the surface when p is reduced. HCl from the solution is sorbed along with the monolayer. Sorption of surface films by C may be used for cleaning surfaces. Myristic acid monolayers are st. in H_2O and (less so) in dil. HCl; the amount dissolved in 3—4 hr. increases linearly with p. J. J. B.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

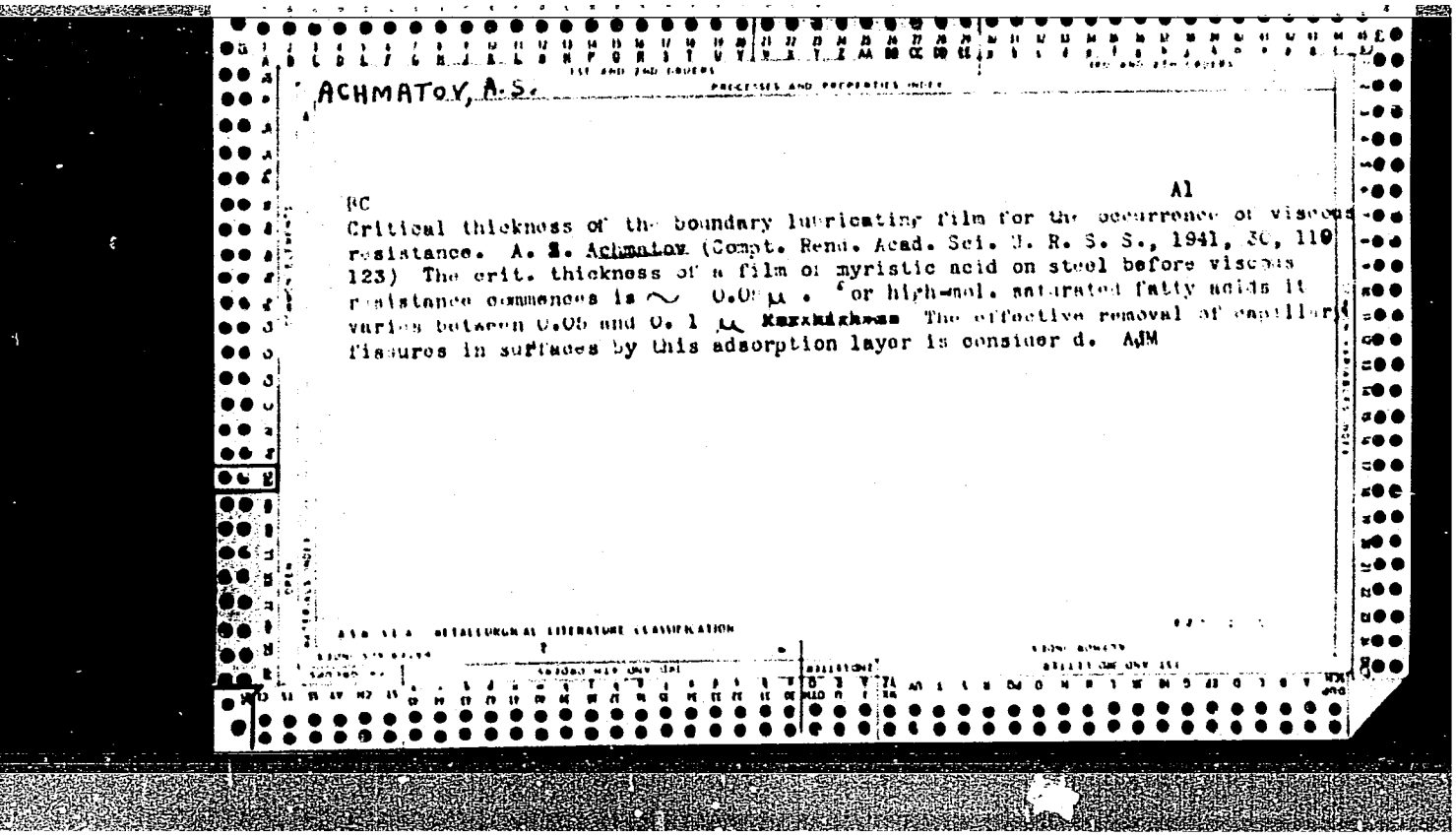


ACHMATOV, A. S.

BC

B-I-1

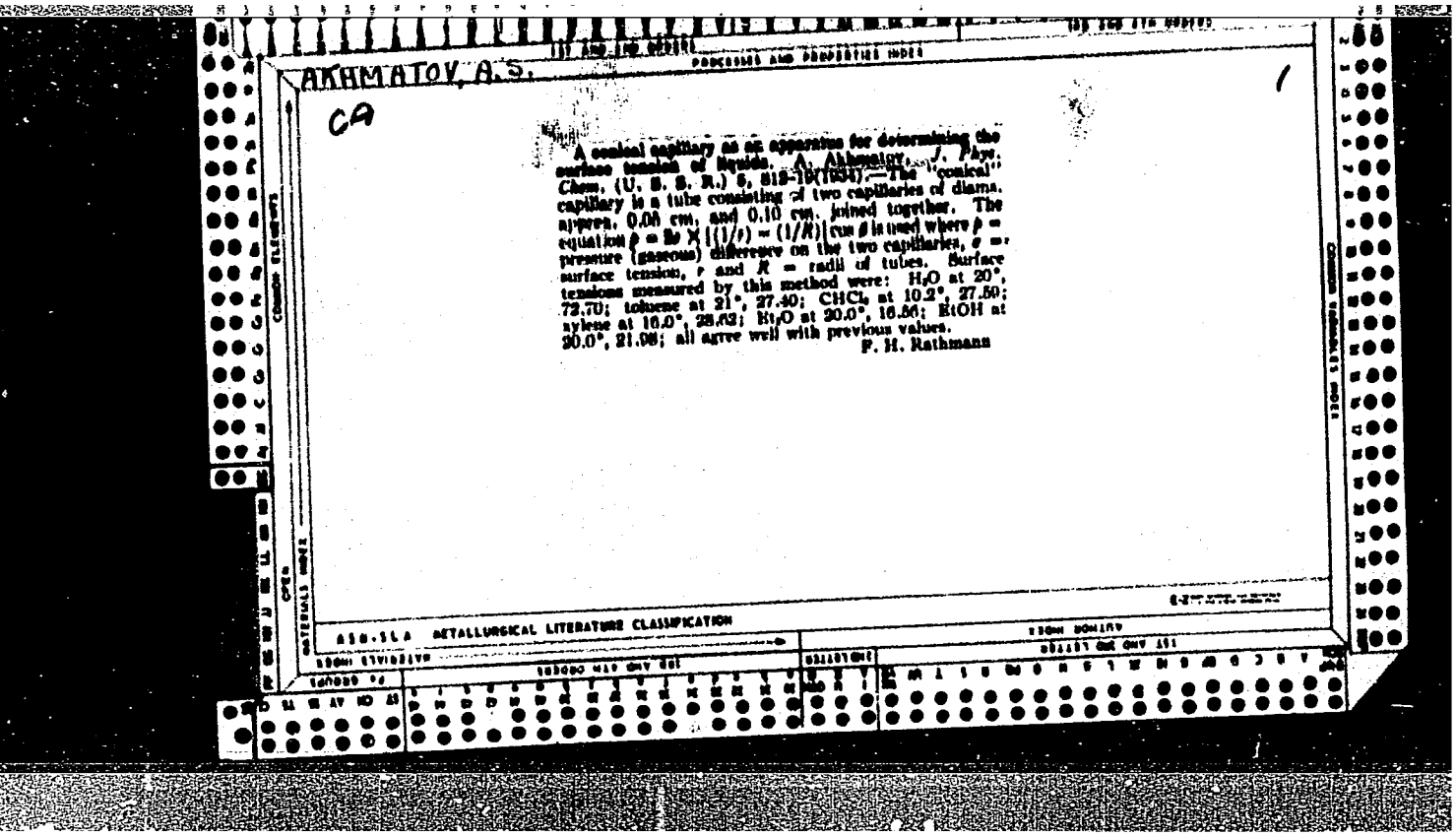
Inclined pendulum and its application to the study of the molecular mechanism of the exterior friction of solids. A. ACHMATOV. (Compt. rend. Acad. Sci. U.R.S.S., 1939, 24, 868—871).—A method had been developed for studying friction and imperfect greasing which involves a simple pendulum and an inclined plane. The theory of the method is given and statistical results are obtained characteristic of the phenomena. W. R. A.



ACHMATOV, A. S.

BC A1

Critical thickness of the boundary lubricating film for the occurrence of viscous resistance. A. S. Achmatov (Compt. Rend. Acad. Sci. U. R. S. S., 1941, 30, 119-123) The crit. thickness of a film of myristic acid on steel before viscous resistance commences is ~ 0.05 μ. For high-mol. saturated fatty acids it varies between 0.05 and 0.1 μ. The effective removal of capillary fissures in surfaces by this adsorption layer is considered. A.M.



PROCESSES AND PROPERTIES INDEX

AKHMATOV, A.S.

Investigations of unimolecular adsorption layers and surface films. I. The measurement of the surface pressure of adsorption layers. A. S. Akhmatov. *J. Phys. Chem.* (U. S. S. R.) 8, 603-13; *Kolloid-Z.* 77, 29-6 (1936). —To avoid errors of the usual torsion balance, such as limited range, change of sensitivity, variations of the torsion const. and elasticity, an "electromagnetic tensiometer" was developed for precise measurement of two-dimensional pressures of surface films. A movable coil (*A*) is mounted on a wire controlling the usual floating barrier and is surrounded by a fixed coil (*B*). As pressure is exerted on the barrier, *A* tends to rotate. The current required in *B* to return *A* to its initial position now measures the pressure on the barrier. L. P. Hall

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS | 3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

AKHMATOV, A. S.

CA

Sorption of long-chain aliphatic compounds from surface films by a solid disperse phase. I. Measurement of two-dimensional pressure as a method of sorption analysis. Sorption kinetics. A. Akhmatov, I. G. Arkhipov, M. I. Sisov and V. [illegible]. *Acta Physicochim. U. R. S. S.* 9, 51-68(19[illegible])(in English).—The two-dimensional surface pressure of higher aliphatic and unsatd. acids in aq. soln. was measured by means of the torque or an electrodynamometer. For the lower homologs, adsorption equil. on charcoal requires several days; for oleic and myristic acids, a time of the order of min. For myristic acid the rate of adsorption by the active charcoal used from a unimol. film on H_2O is given by A. = 63.8 × 10[illegible] mg. per g. per sec. up to 90% satn. (8-9 min.); above 90%, the calcd. values are too high. II. Sorption isotherms. Desorption. A. Akhmatov and I. G. Arkhipov. *Ibid.* 69-88.—Data given on the adsorption of oleic and myristic acids on charcoal, sulfur, and talc show that Langmuir's adsorption equation is obeyed. For oleic acid a_∞ = 0.0125 millimols per g.; for myristic acid a_∞ = 0.0250. The adsorption isotherms were measured by successive compressions and adsorptions (accompanied by a pressure decrease) of the surface layer. The soly. of the films is proportional to the two-dimensional pressure. The use of talc as a film indicator requires a correction for adsorption. F. H. R.

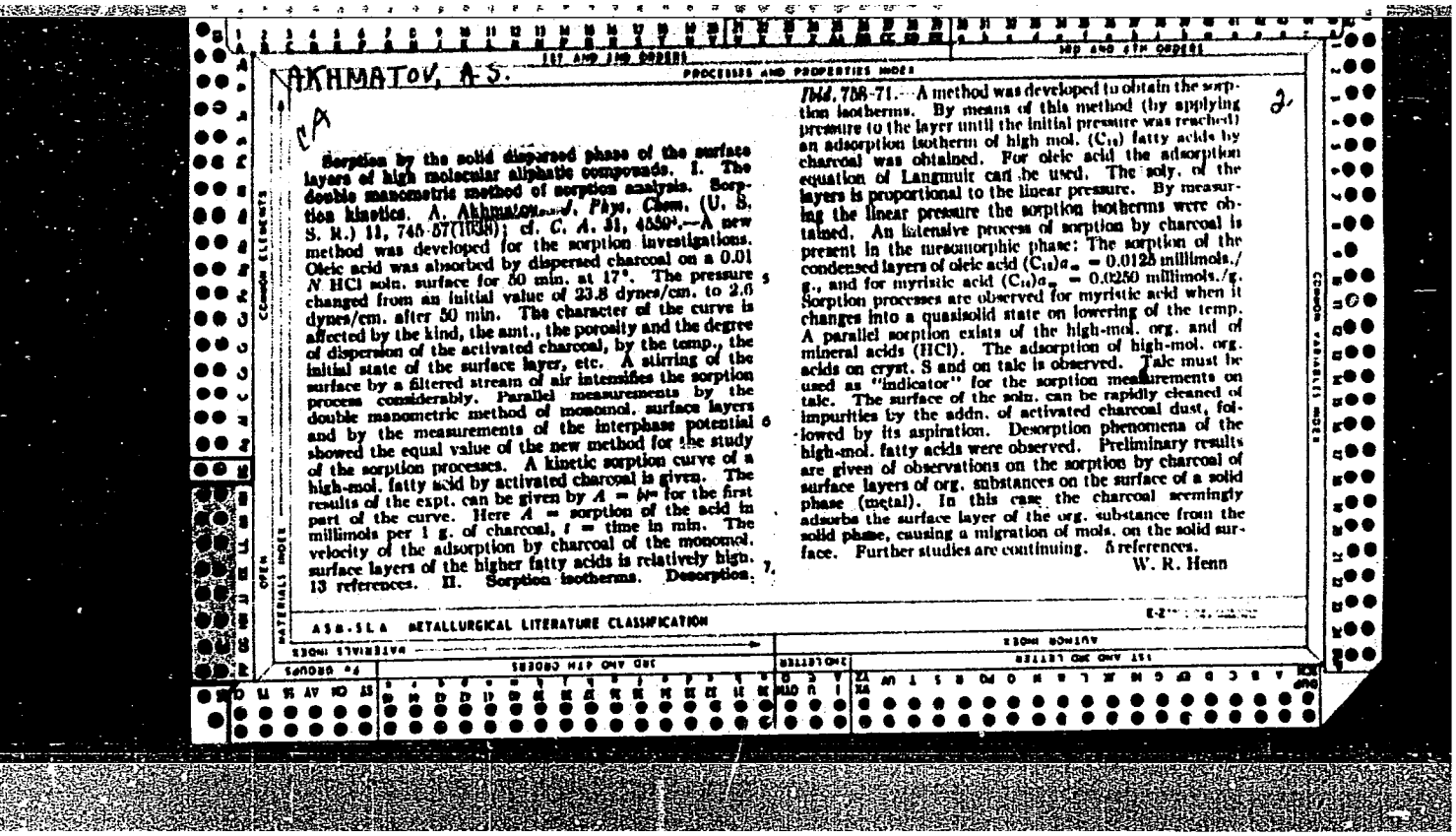
CHEMICAL ELEMENTS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

COMMON VARIABLES INDEX

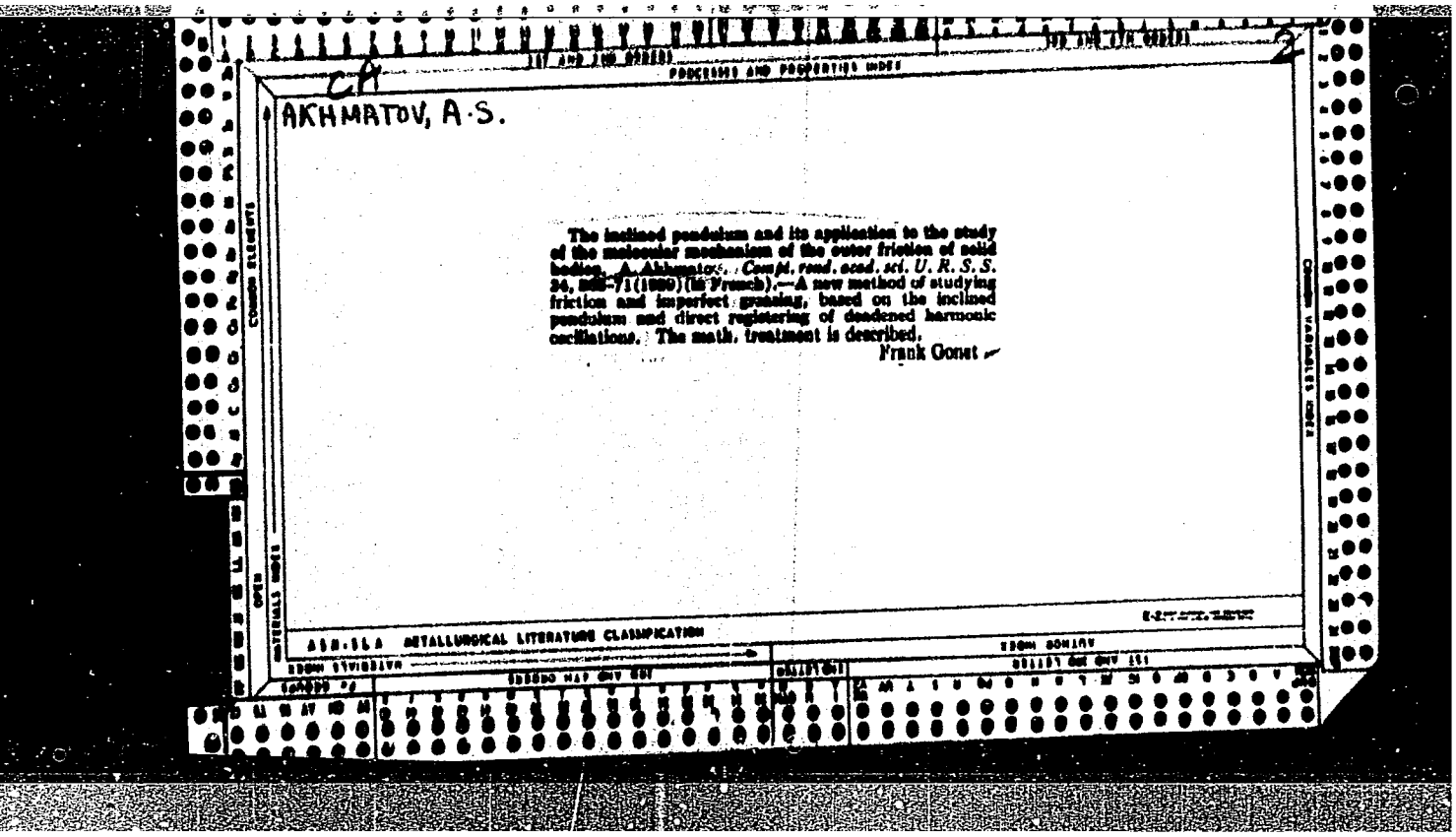
AUTHORS INDEX



AKHMATOV, A.S.

Sorption by the solid dispersed phase of the surface layers of high molecular aliphatic compounds. I. The double manometric method of sorption analysis. Sorption kinetics. A. Akhmatov. *J. Phys. Chem.* (U. S. S. R.) 11, 746-57(1938); cf. *C. A.* 31, 4550⁹.—A new method was developed for the sorption investigations. Oleic acid was absorbed by dispersed charcoal on a 0.01 *N* HCl soln. surface for 50 min. at 17°. The pressure changed from an initial value of 23.8 dynes/cm. to 2.6 dynes/cm. after 50 min. The character of the curve is affected by the kind, the amt., the porosity and the degree of dispersion of the activated charcoal, by the temp., the initial state of the surface layer, etc. A stirring of the surface by a filtered stream of air intensifies the sorption process considerably. Parallel measurements by the double manometric method of monomol. surface layers and by the measurements of the interphase potential showed the equal value of the new method for the study of the sorption processes. A kinetic sorption curve of a high-mol. fatty acid by activated charcoal is given. The results of the expt. can be given by $A = kt^n$ for the first part of the curve. Here A = sorption of the acid in millimols per 1 g. of charcoal, t = time in min. The velocity of the adsorption by charcoal of the monomol. surface layers of the higher fatty acids is relatively high. 13 references. II. Sorption isotherms. Desorption. *Ibid.* 758-71.—A method was developed to obtain the sorption isotherms. By means of this method (by applying pressure to the layer until the initial pressure was reached) an adsorption isotherm of high mol. (C_{18}) fatty acids by charcoal was obtained. For oleic acid the adsorption equation of Langmuir can be used. The soly. of the layers is proportional to the linear pressure. By measuring the linear pressure the sorption isotherms were obtained. An intensive process of sorption by charcoal is present in the mesomorphic phase: The sorption of the condensed layers of oleic acid $(C_{18})a_\infty = 0.0125$ millimols./g., and for myristic acid $(C_{14})a_\infty = 0.0250$ millimols./g. Sorption processes are observed for myristic acid when it changes into a quasisolid state on lowering of the temp. A parallel sorption exists of the high-mol. org. and of mineral acids (HCl). The adsorption of high-mol. org. acids on cryst. S and on talc is observed. Talc must be used as "indicator" for the sorption measurements on talc. The surface of the soln. can be rapidly cleaned of impurities by the addn. of activated charcoal dust, followed by its aspiration. Desorption phenomena of the high-mol. fatty acids were observed. Preliminary results are given of observations on the sorption by charcoal of surface layers of org. substances on the surface of a solid phase (metal). In this case the charcoal seemingly adsorbs the surface layer of the org. substance from the solid phase, causing a migration of mols. on the solid surface. Further studies are continuing. 5 references.

W. R. Henn

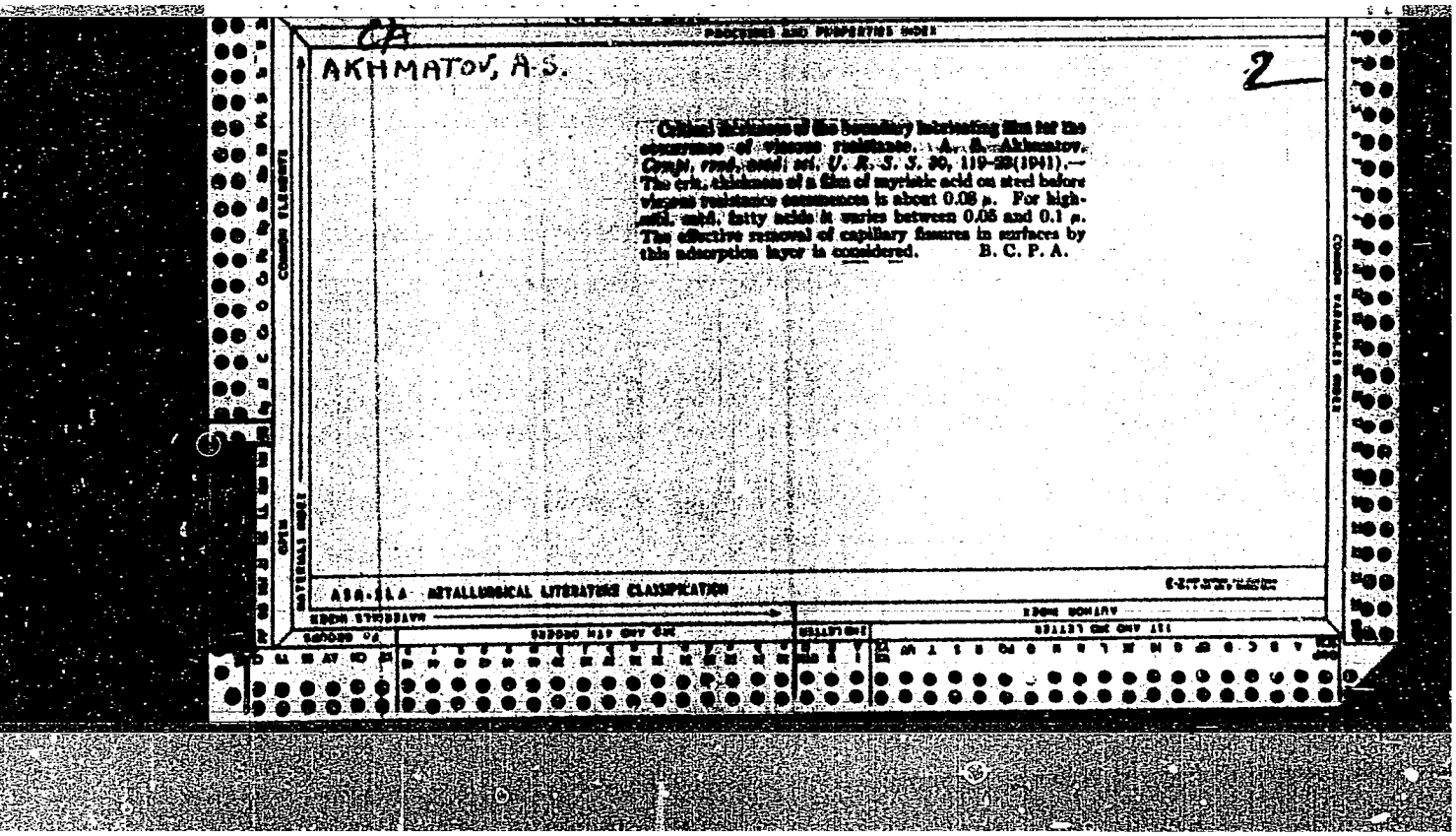


CA

AKHMATOV, A.S.

The inclined pendulum and its application to the study of the molecular mechanism of the outer friction of solid bodies. A. Akhmatov. *Compt. rend. acad. sci. U. R. S. S.* 24, 869-71 (1939) (in French).—A new method of studying friction and imperfect greasing, based on the inclined pendulum and direct registering of deadened harmonic oscillations. The math. treatment is described.

Frank Gonet



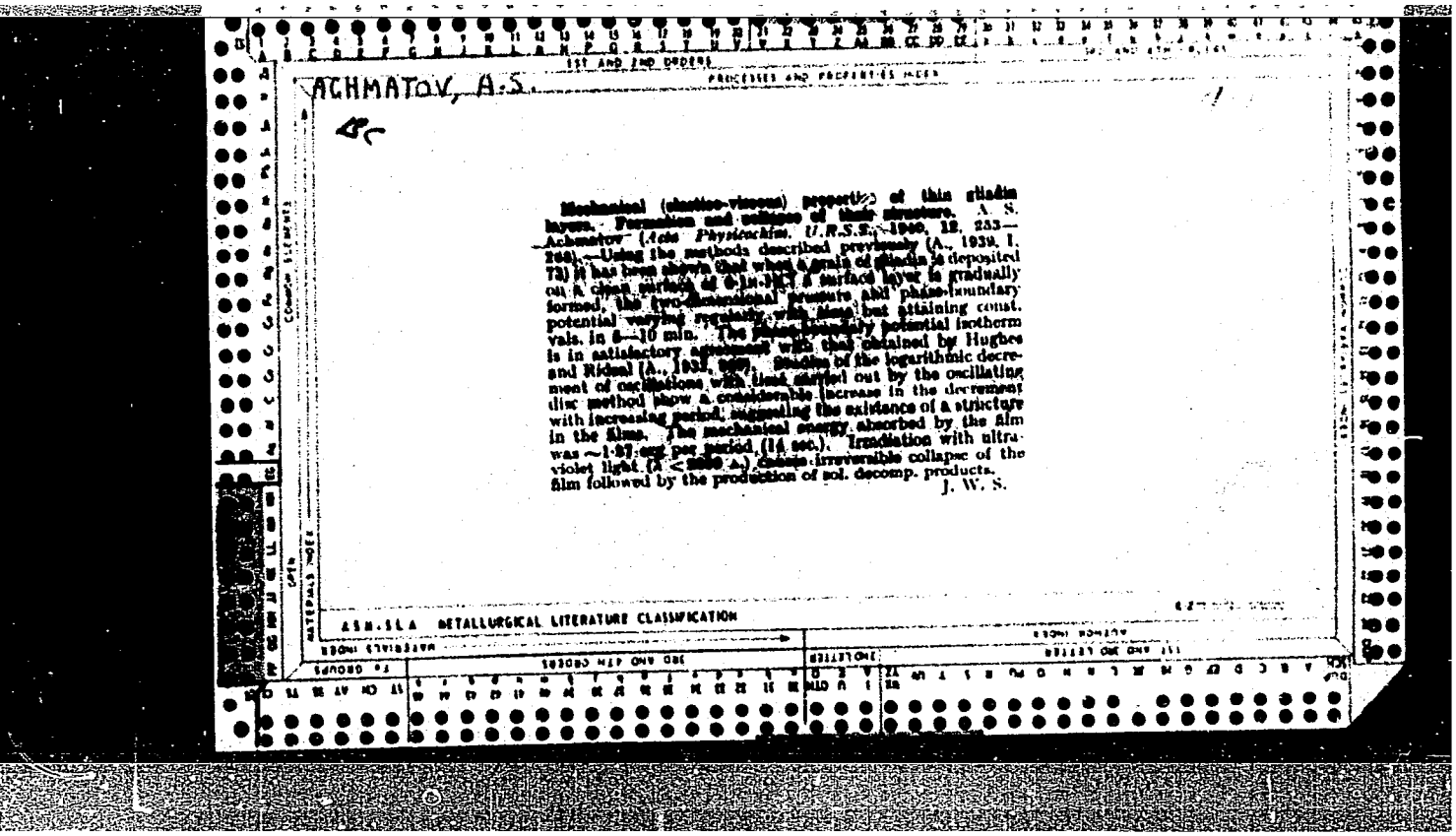
CA

AKHMATOV, A.S.

2

Critical thickness of the boundary lubricating film for the occurrence of viscous resistance. A. S. Akhmatov. *Compt. rend. acad. sci. U. R. S. S.* 30, 119-23(1941).—The crit. thickness of a film of myristic acid on steel before viscous resistance commences is about 0.08 μ. For high-mol. wt. fatty acids it varies between 0.05 and 0.1 μ. The effective removal of capillary fissures in surfaces by this adsorption layer is considered. B. C. P. A.

ASS-SLA- METALLURGICAL LITERATURE CLASSIFICATION

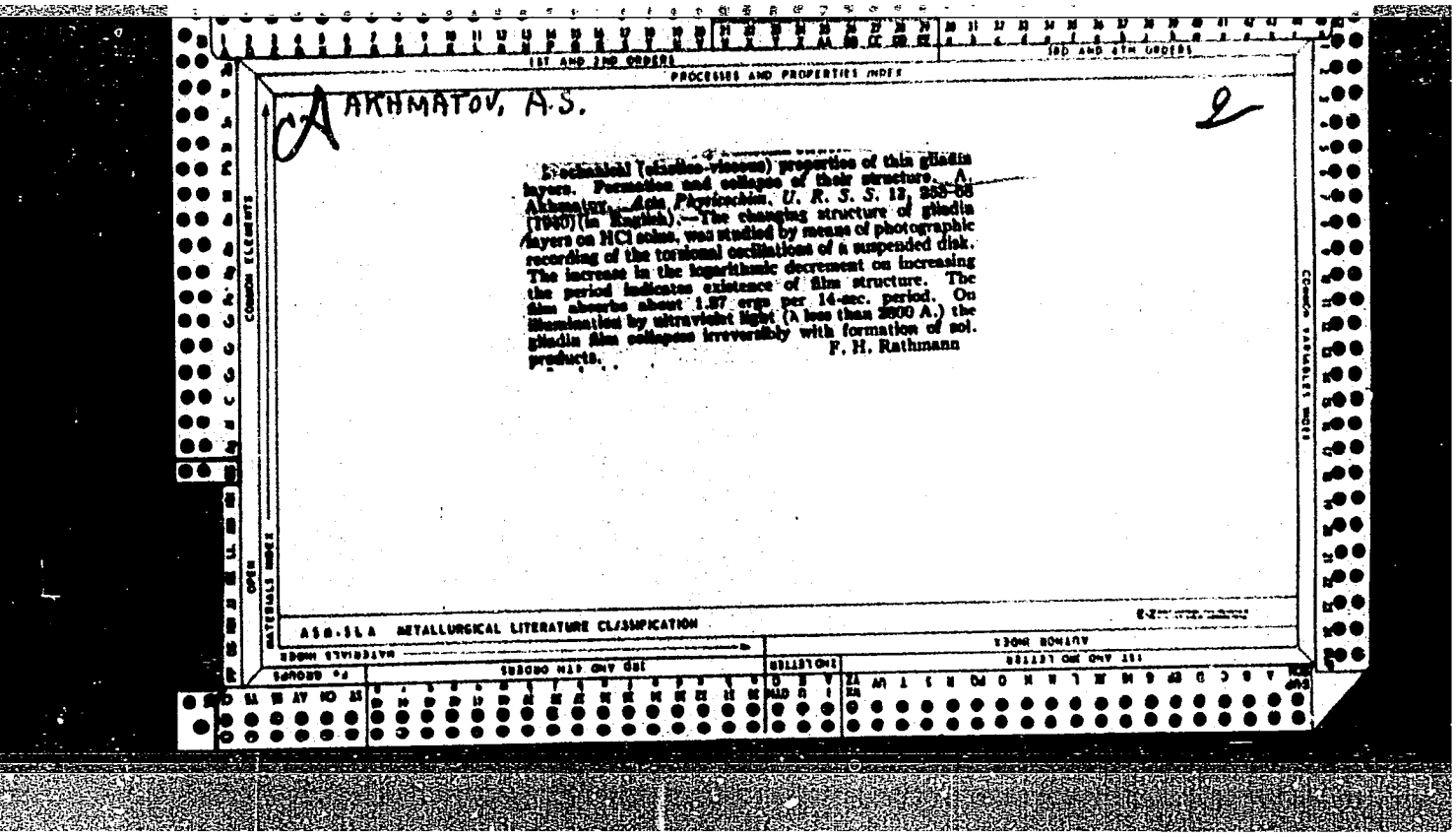


ACHMATOV, A.S.

Mechanical (elastico-viscous) properties of thin gliadin layers. Formation and collapse of their structure. A. S. Achmatov (*Acta Physicochim. U.R.S.S.*, 1940, 12, 253—268).—Using the methods described previously (A., 1939, I, 73) it has been shown that when a grain of gliadin is deposited on a clean surface of 0·1*N*-HCl a surface layer is gradually formed, the two-dimensional pressure and phase-boundary potential varying regularly with time but attaining const. vals. in 8—10 min. The phase-boundary potential isotherm is in satisfactory agreement with that obtained by Hughes and Rideal (A., 1932, 997). Studies of the logarithmic decrement of oscillations with limit started out by the oscillating disc method show a considerable increase in the decrement with increasing period, suggesting the existence of a structure in the films. The mechanical energy absorbed by the film was ~1·57 ergs per period (14 sec.). Irradiation with ultraviolet light ($\lambda < 3650$ Å) causes irreversible collapse of the film followed by the production of sol. decomp. products.

J. W. S.

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION



AKHMATOV, A.S.

Electrical (dielectric-viscous) properties of thin gliadin layers. Formation and collapse of their structure. A. Akhmatov. *Acta Physicochim. U. R. S. S.* 12, 255-68 (1940)(in English).—The changing structure of gliadin layers on HCl solns. was studied by means of photographic recording of the torsional oscillations of a suspended disk. The increase in the logarithmic decrement on increasing the period indicates existence of film structure. The film absorbs about 1.57 ergs per 14-sec. period. On illumination by ultraviolet light (λ less than 3800 A.) the gliadin film collapses irreversibly with formation of sol. products.

F. H. Rathmann

AKHMATOV, A.S.

137-58-5-10612

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 250 (USSR)

AUTHOR: Akhmatov, A.S.

TITLE: The Problem of Boundary Friction (Problema granichnogo treniya)

PERIODICAL: V sb.: Razvitiye teorii treniya i iznashivaniya. Moscow, AN SSSR, 1957, pp 57-64

ABSTRACT: The fundamental concepts and views of the boundary condition and boundary friction are examined, and a survey of the literature on the subject is presented. Bibliography: 4 references.

L.G.

1. Friction--Theory

Card 1/1

AKHMATOV, A.S.

AKHMATOV, A.S.

Processes of finishing metal surfaces and the mechanism of boundary friction. Trudy Sem. po kach. poverkh. no.3:42-51 '57. (MIRA 10:11)
(Grinding and polishing) (Friction)

AKHMATOV, A. S. and KOSHLAKOVA, L. V.

"The Investigation of Elastic Properties of Two-Dimensional Molecular Crystals of F
Fat Acids Formed on Metal Surface.

report presented at the Conf. on Mechanical Properties of Non-metallic Solids, Leningrad, USSR, 19-26 May 1958.

Inst. of Machine Tools and Instruments, Moscow.

Moscow Machine Tool & Tool Inst. (?)

AKHMATOV, A.S.

AUTHOR: Akhmatov, A.S., Professor

3-58-2-4/33

TITLE: Bring the New, the Progressive in the Teaching of General Science (Novoye, progressivnoye - v prepodavaniye obshchenauchnykh distsiplin) A Further Improvement in Physics Teaching at the Vtuz's Is Necessary (Neobkhodimo dal'neysheye uluchsheniye prepodavaniya fiziki vo vtuzakh)

PERIODICAL: Vestnik Vysshey Shkoly, 1958, # 2, pp 20-24 (USSR)

ABSTRACT: The level of physics teaching is still too low, when the presently high engineering requirements are considered. At some vtuz's, physics is only given cursory treatment.

The teaching of physics should be conducted in the following order: lectures on the basic course beginning with the 2nd semester, laboratory work (general practical exercises), so-called "seminar exercises", lectures on a specific branch of physics (during one of the later semesters) and, simultaneously specialized practical training. All studies must be completed with examinations. The number of hours allotted should not be less than 300 in the junior courses and 60 to 100 hours in the senior courses.

Elementary material taught in secondary schools should be eliminated from the program. Sections of classical physics, such as gas- and hydrodynamics, acoustics, crystallography

Card 1/3

Bring the New, the Progressive in the Teaching of General Sciences
A Further Improvement in Physics Teaching at the Vtuz's Is Necessary

and others should be expanded. The concluding part of the basic course should concentrate on the principal theses - the physics of solids, metals, dielectrics, and semiconductors, the theory of liquid state, etc.

Specialized courses in physics may prove necessary to insure a good grounding in physics for engineering students. The compilation of physics textbooks remains a problem. The higher technical schools are in need of textbooks, for both the basic and special physics courses, training aids and short, instructive monographs for all physics sections. The program of practical training must be a skillful combination of classical and modern methods. Graduating theses should include an obligatory section - "The Physico-Mathematical Fundamentals of the Thesis" or "The Physico-Chemical Fundamentals of the Thesis". Members of the chairs of physics should sit on the state examination commissions.

There are 2 Soviet references.

ASSOCIATION: Moskovskiy stanko-instrumental'nyy institut imeni I.V. Stalina
(The Moscow Machine Tool and Instrument Institute imeni I.V.

Akhmatov, A. S., and Koshlakova, L. V.

" On the Measurement of the Elastic Constants of Boundary-Lubrication Layers " p.119.

Sukhoye i granichnoye treniye. Friktsionnyye materialy (Dry and Boundary Friction. Friction Materials) Moscow, Izd-vo AN SSSR, 1960. 302 p. Errata slip inserted. 3,500 copies printed. (Series: Its: Trudy, v. 2)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Ed.: I. V. Kragel'skiy, Doctor of Technical Sciences, Professor; Ed. of Publishing House: K. I. Grigorash; Tech. Ed.: S. G. Tikhomirova.

The collection published by the Institut mashinovedeniya, AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines, April 9-15, 1958.

Akhmatov, A. S.

"Physical Properties of Boundary-Lubrication Layers from the Viewpoint of the Structural Mechanics of the Molecules Forming Them." p. 119

Sukhoye i granichnoye treniye. Friktsionnyye materialy (Dry and Boundary Friction. Friction Materials) Moscow, Izd-vo AN SSSR, 1960. 302 p. Errata slip inserted. 3,500 copies printed. (Series: Its: Trudy, v. 2)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Ed.: I. V. Kragel'skiy, Doctor of Technical Sciences, Professor; Ed. of Publishing House: K. I. Grigorash; Tech. Ed.: S. G. Tikhomirova.

The collection published by the Institut mashinovedeniya, AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines, April 9-15, 1958.

S/058/61/000/009/023/050
A001/A101

11.9000

AUTHOR: Akhmatov, A.S.

TITLE: Physical properties of boundary lubrication layers from the viewpoint of the structural mechanics of molecules forming them

PERIODICAL: Referativnyy zhurnal. Fizika, no. 9, 1961, 168, abstract 9D25 ("Tr. 3-y Vses. konferentsii po treniyu i iznosu v mashinakh, v. 2", Moscow, AN SSSR, 1960, 119 - 124)

TEXT: The author considers molecular-crystalline structure of boundary layers from the viewpoint of the structural mechanics of forming molecules. The following components of elastic reaction are found on the basis of an ideal improved scheme of boundary layers: 1) elasticity of methylene molecule-chains; 2) elasticity of the anisotropic molecular-crystalline structure of the boundary layer; 3) resistance to squeezing-out. Tangential resistance to slip is proportional to the square of the number of interacting groups, whereas normal resistance - to the third power of it. The concept of "interacting groups" in-

LÜ CHAO-TSZEN [Lu Ch'ao-tsêng]; AKHMATOV, A.S.

Investigating the adhesion of plane-parallel end measures. Izm.tekh. no.10:19-22 O'60. (MIRA 13:10)
(Length measurement) (Friction)

AKHMATOV, A. S.

42

PHASE I BOOK EXPLOITATION SOV/5590

Konferentsiya po poverkhnostnym silam. Moscow, 1960.

Issledovaniya v oblasti poverkhnostnykh sil; sbornik dokladov na konferentsii po poverkhnostnym silam, aprel' 1960 g. (Studies in the Field of Surface Forces; Collection of Reports of the Conference on Surface Forces, Held in April 1960) Moscow, Izd-vo AN SSSR, 1961. 231 p. Errata printed on the inside of back cover. 2500 copies printed.

Sponsoring Agency: Institut fizicheskoy khimii Akademii nauk SSSR.

Resp. Ed.: B. V. Deryagin, Corresponding Member, Academy of Sciences USSR; Editorial Board: N. N. Zakhavayeva, N. A. Krotova, M. M. Kusakov, S. V. Nerpin, P. S. Prokhorov, M. V. Talayev and G. I. Fuks; Ed. of Publishing House: A. L. Bankvitser; Tech. Ed.: Yu. V. Rylina.

PURPOSE: This book is intended for physical chemists.

Card 1/8

Studies in the Field of Surface Forces (Cont.) SOV/5590

III. SURFACE FORCES IN THIN LAYERS OF LIQUIDS

AKHMATOV, Aleksandr Sergeyevich; GRIGOROVA, V.A., red.; LIKHACHEVA, L.V., tekhn. red.

[Molecular physics of boundary friction] Molekuliarnaia fizika granichnogo treniia. Moskva, Fizmatgiz, 1962. 472 p. (MIRA 16:9)

(Friction)

L 00311-66 EWT(m)/EWP(w)/EPF(c)/T/EWP(t)/EWP(b) BW/JD/DJ/GS

ACCESSION NR: AT5020431 UR/0000/65/000/000/0005/0007

AUTHORS: Akhmatov, A. S.; Ustok, Kh. Z.

TITLE: Pressure dependence of surface friction forces

SOURCE: AN SSSR. Nauchnyy sovet po treniyu i smazkam. Teoriya smazochnogo deystviya i novyye materialy (Theory of lubricating action and new materials). Moscow, Izd-vo Nauka, 1965, 5-7

TOPIC TAGS: lubricant, lubricant property, surface friction / GOST 982 53 transformer oil, MZP 6 watch oil

ABSTRACT: To determine the accuracy of the Amont-Kulon surface friction law (W. B. Hardy. Collected Scientific Papers. Cambridge, 1936, p. 609) over a wide range of pressures, the friction forces of steel, Cr, Al, Cu, and Ni couples lubricated by pure stearic acid and technical oils (vaseline oil, transformer oil GOST 982-53, and watch oil MZP-6) were investigated as a function of contact pressure. Three specimens were lubricated as per A. S. Akhmatov (Molekulyarnaya fizika granichnogo treniya. M., Fizmatgiz, 1963), loaded by a hydraulic press, and the center specimen was then pushed by a screw jack, recording the force required to initiate motion. Only the data for steel on steel are presented (see

Card 1/4

L 00311-66

ACCESSION NR: AT5020431

2

Figs. 1 and 2 on the Enclosure). As can be seen, the results were not linear, indicating that the Amont-Kulon law is a linear approximation which can be used only over a limited contact pressure range. A short discussion of the friction phenomenon concludes that the exponential nature of the curve is determined by the fundamental relation of atomic interaction forces on atomic spacing. Orig. art. has: 4 figures.

ASSOCIATION: Nauchnyy sovet po treniyu i smazkam, AN SSSR (Scientific Committee on Friction and Lubrication, AN SSSR)

44

SUBMITTED: 22May65 ENCL: 02 SUB CODE: FP

NO REF SOV: 003 OTHER: 004

Card 2/4

L 00311-66

ACCESSION NR: AT5020431

ENCLOSURE: 01

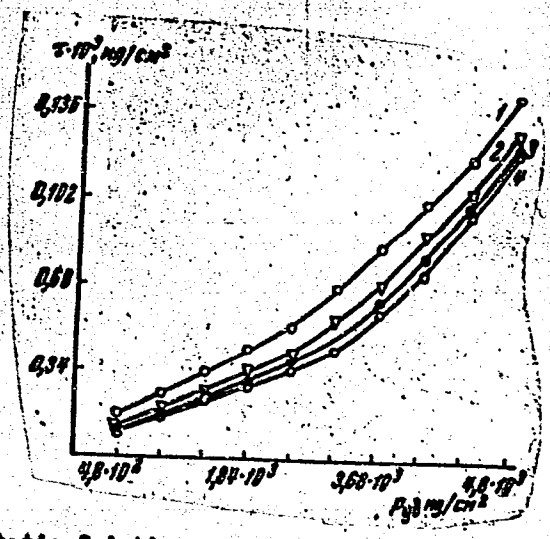


Fig. 1. Static friction vs contact pressure for various thickness of stearic acid: 1- 0.01, 2- 0.02, 3- 0.03, 4- 0.04 micron

Card 3/4

L 00311-66

ACCESSION NR: AT5020431

ENCLOSURE: 02

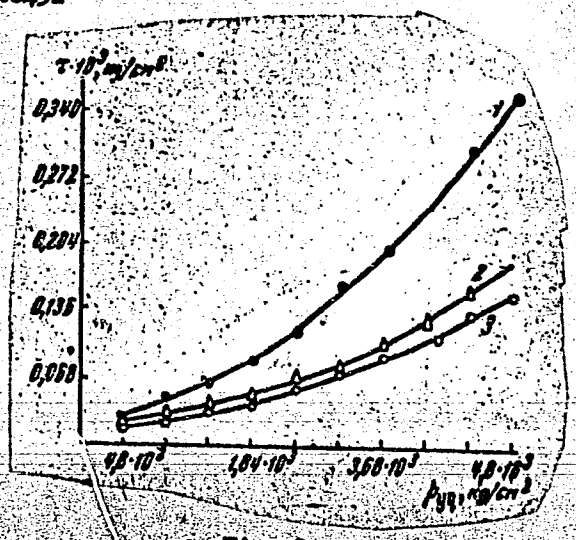


Fig. 2.
1- vaseline oil; 2- transformer oil; 3- watch oil

Card 4/4

ACC NR: AP6034598 SOURCE CODE: UR/0115/66/000/010/0075/0076

AUTHOR: Akhmatov, A. S.; Bufeyev, V. A.; Korndorf, S. F.; Tkachenko, A. N.

ORG: none

TITLE: A photoamplifier with sliding contactless photopotentiometer

SOURCE: Izmeritel'naya tekhnika, no. 10, 1966, 75-76

TOPIC TAGS: photomultiplier, image amplification, circuit design

ABSTRACT: A new design of a photoamplifier is reported in which a sliding contactless photopotentiometer serves as the photosensitive element. The basic circuit diagram of the photoamplifier is shown in Fig. 1. The principle of operation of the proposed amplifier is as follows: with the aid of lens L and mirror galvanometer G, slot D is projected on the photosensitive layer of the potentiometer producing a conducting bridge on it. When the amplified signal current is not flowing through the galvanometer, the slot image is in the central position; in this case the resistance of the resistive layer is split in two parts (i.e., the output voltage across the load R_n is equal to zero). When the amplified signal current is flowing through the potentiometer, the galvanometer mirror is deflected as a result of which the slot image is shifted to one or to the other side acting as a sliding optical contact. Because of this, at the output of the circuit there will be a current flowing through the mirror galvanometer and to the voltage in the photopotentiometer. The photoamplifier circuit

 UDC: 621.383

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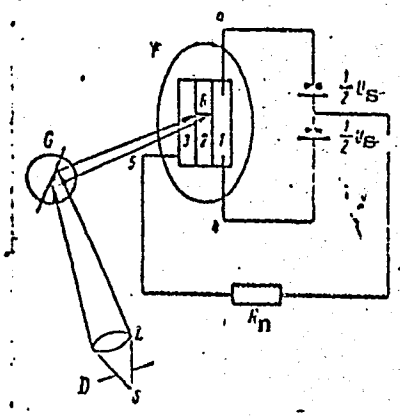

Fig. 1. Photoamplifier

F - Potentiometer; S - light source; D - slot diaphragm; L - focusing lens; G - mirror galvanometer; 1 - resistive layer; 2 - photosensitive layer; 3 - conducting slip ring; 4 - resistive layer leads; 5 - slip ring lead; 6 - slot image on the photosensitive layer; U_s - ac or dc power supply source; R_n - load resistance.

has the following advantages over the existing ones: 1) high linearity of the amplitude characteristic, 2) higher gain with respect to current and voltages, 3) the gain is not affected by unavoidable voltage and current fluctuations in the power supply circuit of the light source, and 4) the sensitivity threshold of the amplifier is determined by the sensitivity threshold of the mirror galvanometer. Orig. art. has: 3 figures.

SUB CODE: 09/ SUBM DATE: 11May66/ ORIG REF: 007/ OTH REF: 001

Card 2/2

AKHMATOV, Boris Aleksandrovich; GORBACHEV, Ye.A.; IVANOV, I.S., inzhener; DUBROVSKIY, V.A., redaktor; PEVZNER, V.I., tekhnicheskiy redaktor

[Self-propelled combines] Samokhodnyi kombain. Pod red. I.S.Ivanova. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 183 p. (MIRA 9:8)
(Combines (Agricultural machinery))

AKHMATOVA, I.A.

Experimental determination of the heat capacity of liquid tin at high temperatures. Dokl. AN SSSR 162 no.1:127-129 My '65. (MIRA 18:5)

1. Institut teplofiziki Sibirskogo otdeleniya AN SSSR. Submitted November 9, 1964.

AKHMATOV, K.; YEVTUSHENKO, G.A., prof., otv.red.

[Winter hardiness of trees and shrubs introduced in the spruce forest belt of the Terskei Ala-Tau] Zimostoikost' derev'ev i kustarnikov, introdutsirovannykh v poiase elovykh lesov Terskei Ala-Too. Frunze, Izd-vo Akad.nauk Kirgizskoi SSR, 1960. 97 p. (MIRA 13:12)

1. Institut botaniki Akademii nauk Kirgizskoy SSR (for Yevtushenko).
(Terskei Ala-Tau--Plants--Frost resistance)
(Trees) (Shrubs)

AKHMATOV, K. A.

Effect of leaf fall on the wintering of woody plants. Biul. Glav. bot. sada no.47:96-97 '62. (MIRA 16:1)

1. Institut botaniki AN Kirgizskoy SSR, Frunze.

(Tien Shan--Plants--Frost resistance)
(Abscission(Botany))

AKHMATOV, M. G.

Stability of Motion, Vibration, Regulation

Dissertation: "Investigation of Means for Decreasing the Oscillations of a Synchronous Motor Under Pulsating Load." Cand Tech Sci, Kiev Polytechnic Inst, Kiev, 1953. (Referativnyy Zhurnal -- Mekhanika, Moscow, Mar 54)

SO: SUM 213, 20 Sep 1954

AKHMATOV, M.M., inzh.; MARSHAK, S.A., kand. tekhn. nauk

Closed shield tunneling in the construction of sewers. Prom. stroi. 43 no.9:[illegible] '65. (MIRA 18:9)

AKHMATOV, P.A

Razvitie rechnykh perevozok v chetvertoi stalinskoi piatiletke. [Development of river freight traffic in the 4th Stalin five-year plan] . (Rechnoi transport, 1946, no. 7-8, p.3-4)
DLC: TC601.R4

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress Reference Department, Washington, 1952, Unclassified.

AKHMATOV, P. A. and GALKOVSKAYA, M. G.

Metodika analiza rosta proizvoditel nosti transportnogo flota. [Methods of analysing the transport efficiency of the fleet]. (Rechnoi transport, 1951, v.11, no. 2, p.4).
DLC: TC601.R4

SO: Soviet Transportation and Communications, A Bibiography, Library of Congress, Reference Department, Washington, 1952. Unclassified.

AKHMATOV, P.A., inzhener; GLAZKOV, M.M., inzhener

The introduction of a coordinated technology in industry and transportation as a potential in the development of river transportation. Rech. transp. 14 no.6:6-9 Je '55. (MIRA 8:9)
(Inland water transportation) (Freight and freightage)

AKHMATOV, P.A., inzhener; GLAZKOV, M.M.

Ways to improve research and planning in the economics and operation of river transportation. Rech. transp. 14 no.11:4-9 N '55. (MLRA 9:2)

(Inland water transportation) (Freight and freightage)

AKHMATOV, P.A.

AKHMATOV, P.A.; CHERTKOV, K.A.

Correctly evaluate the comparative efficiency in the use of main kinds of transportation ("Methods of determining the economic efficiency of various kinds of transportation" parts I and II.) Rech.transp. 16 no.9:39-40 S '57. (MIRA 10:12)
(Transportation--Costs)

AKHMATOV, Pavel Aleksandrovich; KHODUNOV, Mikhail Yevgrafovich; NIKOLAYEVA, M.N., retsenzent; RUMYANTSEV, S.M., red.; FEDOROV, V.F., red.; FEDYAYEVA, N.A., red.izd-va; BOBROVA, V.A., tekhn.red.

[River transportation in the directives of the Communist Party, legislative acts and regulations of the Soviet government, 1918-1959] Rechnoi transport v direktivakh Kommunisticheskoi partii, zakonodatel'nykh aktakh i postanovleniiakh sovetskogo pravitel'stva, 1918-1959. Moskva, Izd-vo "Rechnoi transport," 1959. 230 p.
(MIRA 13:6)
(Inland water transportation--Laws and legislation)

AKHMATOV, P. A.

In the technical council of the Ministry of the River Fleet.
Rech.transp. 18 no.12:51 D '59. (MIRA 13:4)
(Inland water transportation)

S/169/62/000/007/056/149
D228/D307

AUTHORS: Kotlyarevskiy, L. N. and Akhmatov, P. G.

TITLE: Effectiveness of aeromagnetic surveying in geologic mapping, prospecting for iron ore deposits, and solving other problems in Uzbeskistan (Discourse theses)

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 29, abstract 7A190 (V sb. Sostoyaniye i perspektivy razvitiya geofiz. metodov poiskov i razvedki polezn. iskopayemykh, M., Gostoptekhizdat, 1961, 527-528)

TEXT: Aeromagnetic surveying in Uzbekistan allows Paleozoic structures beneath sedimentary deposits to be mapped and the sites of large intrusives to be defined more precisely. The effectiveness of aeromagnetic surveying for seeking local anomalies, related to iron ore deposits, has been confirmed by many examples; nevertheless, it encounters a number of limitations, caused by the magnetic field's complex morphology and by the procedure's imperfect application. The effectiveness of aeromagnetic surveying is lowest

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S/169/62/000/007/056/149
Effectiveness of aeromagnetic ... D228/D307

under conditions of a mountanous topography. [Abstracter's note: Complete translation.]

Card 2/2

MEL'KANOVITSKIY, I. M.; AKHMATOV, P. G.; LEPIGOVA, E. L.

Magnetic properties of rocks in the eastern part of Central Asia. Uzb. geol. zhur. 6 no.5:83-85 '62. (MIRA 15:10)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut geologii i mineral'nogo syr'ya, Tashkent.

(Soviet Central Asia—Rocks—Magnetic properties)

D263/D301

AUTHORS: Kotlyarevskiy, L. N. and Akhmatov, P. G.

TITLE: The effectiveness of aeromagnetic surveying in the search for iron ore deposits, in geological charting, and in solution of other problems in Uzbekistan

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 29, abstract 2D176 (Byul. nauchno-tekhn. inform. M-vo geol. i okhrany nedr SSSR, 1962, no. 1 (35), 82-85)

TEXT: The main results are given of a large scale aerophysical survey of eastern Uzbekistan in search for iron ore deposits. It is concluded that of the areas studied the most promising for iron ore are magnetic anomalies of intensity greater than 300 γ, associated with the zones of contact of the upper Variesk granodiorites with the carbonate deposits of the Carboniferous. Information is given of main anomalies discovered by magnetic exploration. A comparison is made of results of aeromagnetic surveys made at various scales (1:50,000 and 1:200,000), carried out over the same areas; this

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The effectiveness of ...

S/169/63/000/002/109/127
D263/D307

showed the advisability of supplementing a 1:200,000 survey with a survey made on a larger scale. It is noted that in the quantitative interpretation of magnetic anomalies, caused by sheetlike magnetic deposits 10 - 20 m thick and discovered by aeromagnetic surveys with the АСГМ-25 (ASGM-25) station, the errors reach 500 - 1000%. These errors are mainly due to the inertia of the aeromagnetic station.
[Abstracter's note: Complete translation.]

Card 2/2

AKHMATOV, P.G.; MEL'KANOVITSKIY, I.M.

Physical properties of Paleozoic rocks in the southern zone of the Tien Shan. Uzb. geol. zhur. 8 no.4:76-85 '64. (MIRA 18:5)

1. Uzbekskiy geofizicheskiy trest i Sredneaziatskiy nauchno-issledovatel'skiy institut geologii i mineral'nogo syr'ya, Tashkent.

AKHMATOV, S.

Akhmatov, S. - "Stakhanovite arithmetic", (About Ya. V. Troyan, drill operator of the Kommunar mine of the Krivoy Rog basin), Ogonek, 1949, No. 9, p. 6.

SO: U-3042, 11 March 1953, (letopis 'nykh Statey, No. 10, 1949).

AKHMATOV, S.

AKHMATOV, S. (Dnepropetrovsk)

Combine operator and innovator. Nauka i zhizn' 22 no.8:33-34 Ag'55. (MLRA 8:10)

(Combines (Agricultural machinery))

AKHMATOV, S., (g.Denpropetrovsk)

Rapid constuction of blast furnaces. Nauka i zhizn' 22 no.9:7-9 S '55. (MLRA 8:12)

(Blast furnaces)

AKHMATOV, S., inzh.

The Kakhovka Sea--Krivoy Rog Canal. Znan. ta pratsia no.3:5-6 Mr '59. (MIRA 12:10)
(Kakhovka Sea--Krivoy Rog Canal)

AKHMATOV, S.N.

Here ore is dressed. Nauka i zhizn' 24 no.3:25-27 Mr '57. (MLRA 10:5)

(Krivoy Rog--Ore dressing)

AKHMATOV, Semen Naumovich; LARINA, L.M., red.; SHADRINA, N.D., tekhn.red.

[Metallurgists and miners are introducing progressive practices] Metallurgi i gorniaki vnedriaiut peredovoi opyt. Moskva, Izd-vo VTsSPS Profizdat, 1958. 70 p. (MIRA 12:9)
(Socialist competition)

AKHMATOV, S. (Dnepropetrovsk)

Spirit of innovations. NTO 2 no.6:43-44 Je '60. (MIRA 14:2)
(Dnepropetrovsk—Rolling (Metalwork)—Technological innovations)

AKHMATOV, S., inzh. (Dneprodzerzhinsk, Dnepropetrovskoy oblasti)

Trusty helpers of steelworkers. Nauka i zhyttia 10 no.6:11-15 Je '60. (MIRA 13:7)
(Dneprodzerzhinsk--Steel industry)
(Automation)

AKHMATOV, S. V.

34066. Stepykh pridneprovyya. (Ob osushchestvlenii stalinskoy programmy preobpazovaniya prirody. Ocherk). Sov. ukraina 2, 1949, s. 53-64

SO: Knizhuaya, Letopis', Vol. 7, 1955

AKHMATOV, V.

AKHMATOV, V. Cartography (In Akademiia Nauk SSSR. The Pacific, Russian Scientific Investigations. Leningrad, 1926. p. 27-40) DLC: Q127.R9A5 1926

SO: LC, Soviet Geography, Part I, 1951; Uncl.

AKHMATOV, V.

AKHMATOV, V.
Oceanography. (In Akademiia Nauk SSSr. The Pacific. Russian scientific investigations. Leningrad, 1926. p. 95-112).

DLC: Q127.R9A5 1926

So; LC Soviet Geography Part I 1951 Uncl.

AKHMATOV, V.G.

Die for cold bending of pipes. Mashinostroitel' no.9:30 S '65. (MIRA 18:12)

AKHMATOV, V. V.

Printed tables entitled "Altitude and Azimuth in Three Minutes", by V. V. Akhmatov, published by USSR Navy Ministry, Leningrad, 1936. (CIFE Comment: Duplicate of ATIS Document #201386 which was published in "Enemy Documents, Issue #26".)

AKHMATOV, Ye.A.

Automatic machine for manufacturing springs. Mashinostroitel' no.10: 17 O '65. (MIRA 18:10)

L 54702-65 EPA(w)-2/EWT(m)/EPF(n)-2/EPF(c)/EPR/EWP(j)/EWP(t)/FCS(f)/EWP(b) Pc-4/Pr-4/Ps-4/Pt-7/Pi-4/Pu-4 IJP(c)/RPL EM/JD/WW/JW/JG/DJ/RM

ACCESSION NR: AP5013447 UR/0020/65/162/001/0127/0129

...matova, I. A.

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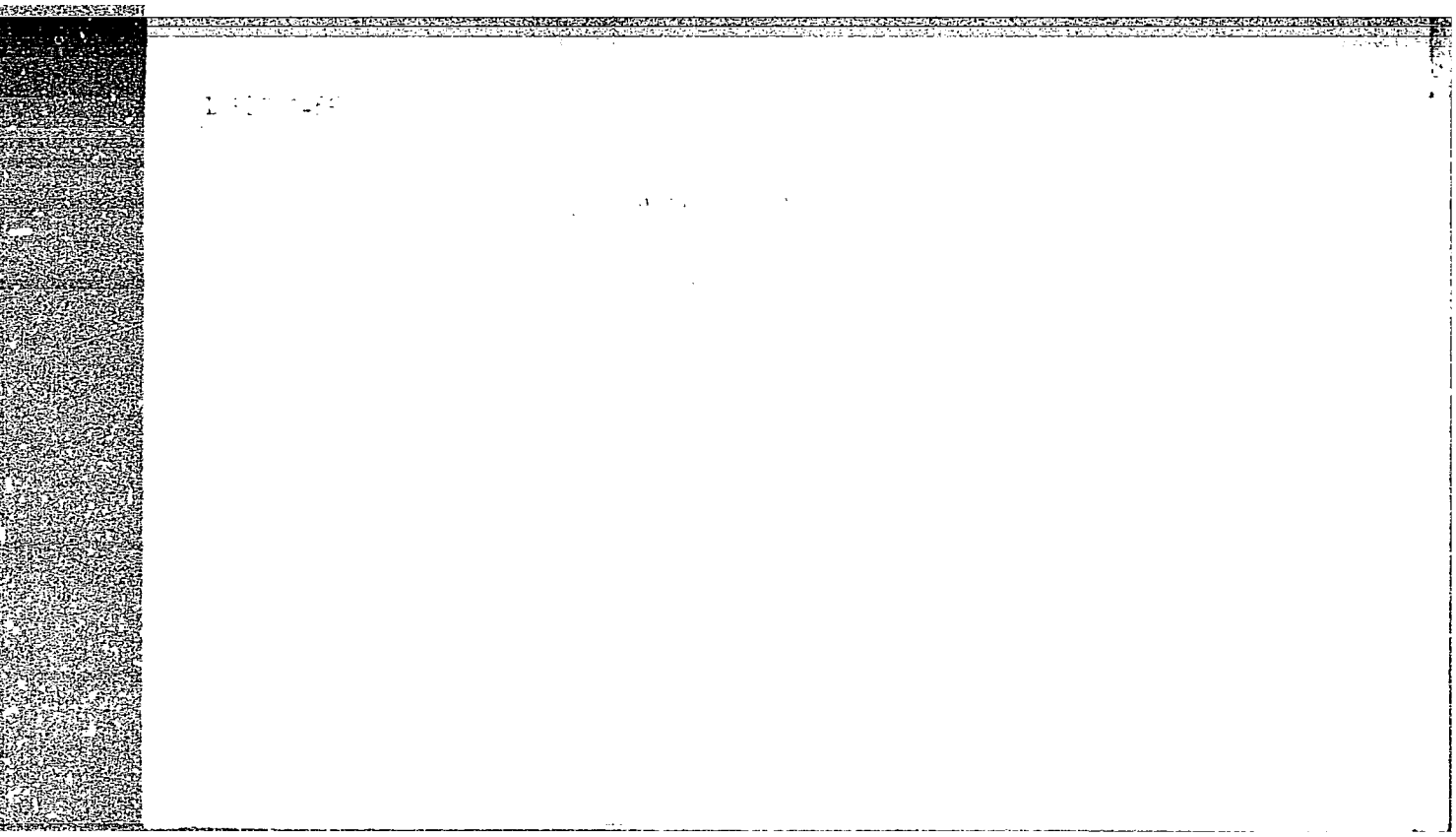

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ACCESSION NR: AP5013447

OTHER:

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L 54702-65
ACCESSION NR: AP5013447

ENCLOSURE: 01

Fig. 1. Schematic diagram of the

AKHMATOVA, N. A.

AUTHORS: Zheludeva, G.A. and Akhmatova, N.A. 109-3-11/23

TITLE: Energy Distribution of the Photo-electrons in the Antimony-caesium Cathode during Various Stages of its Formation (Raspredeleniye fotoelektronov po energiyam dlya sur'myano-tseziyevogo katoda na raznykh stadiyakh yego formirovaniya)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol.III, No.3, pp. 400 - 404 (USSR).

ABSTRACT: The investigation of the energy distribution of the photo-electrons was done by the spherical-condenser method. The investigated cathodes were prepared as follows: a layer of Sb was deposited by evaporation on to a glass sphere. The layer had a thickness of 1 500 Å and was not transparent. The activation process followed the standard technique, i.e. the Sb layer was treated by Cs vapours at a temperature of 180 °C. Three types of the activated film were prepared. The first stage was characterised by a straw-yellow colouring of the emissive surface; the sensitivity of the surface was 0.1 % that of the normal Sb-Cs cathode. The second film, corresponding to the second activation stage, had a light-red colouring and its sensitivity was 0.6 % that of the standard cathode. Finally, the third cathode had a cherry-red colouring and the standard

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Energy Distribution of the Photo-electrons in the Antimony-caesium Cathode during Various Stages of its Formation

sensitivity (its sensitivity was taken as unity). Current voltage curves of the three cathodes were taken at the following wavelengths: 5 461, 4 047, 2 805, 2 482 and 2 300 Å. The resulting curves are shown in Figs. 1a, 6 and b. The curves were used to evaluate the work functions of the cathode by employing the Einstein equation and it was found that these were 1.78 ± 0.05, 1.56 ± 0.05 and 1.51 ± 0.05 eV for the first, second and third activation stages, respectively. These values are valid for the wavelength of 2 805 Å. By differentiating the current voltage curves of Fig. 1, it was possible to obtain the curves of the photo-electron energy distribution; these are shown in Figs. 2a, 6 and b; curves of Fig. 2a correspond to the wavelength of 4 047 Å, those of Fig. 26 are for the wavelength of 2 805 Å, while Fig. 2b corresponds to the wavelength of 2 300 Å. The authors thank Professor N.A. Kaptsov for directing this work. There are 2 figures and 4 references, 2 of which are Russian and 2 English.

ASSOCIATION: Chair of Electronics of the Physics Faculty of the Moscow State University im. M.V. Lomonosov (Kafedra elektroniki fizicheskogo fakul'teta

109-3-11/23

Energy Distribution of the Photo-electrons in the Antimony-caesium Cathode during Various Stages of its Formation

Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova)

SUBMITTED: January 19, 1957

AVAILABLE: Library of Congress

Card3/3

AKHMATOVICH, O.

POLAND / Organic Chemistry. Organic Synthesis. G

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 39575.

Author : Akhmatovich O., Leplyavy, M., Zamoysky A.
Inst : Polish Academy of Sciences.
Title : Chemistry of Cyanocarbonyl. I. Reaction Between Cyanorcarbonyl and -methyl styrol and Allyl-benzene.

Orig Pub: Byul. Polsk. A.N., 1955, Otd. 3,3, No 10, 535-542.

Abstract: In the reaction of α-methyl styrol (I) in a hexane solution at $\sim$20°C with one mole of $CO(CN)_2$ (II) one obtains $CH_2=C(C_6H_5)CH_2CO.CN$ (III). The fact is verified by the hydrolysis of (III) ($\sim$20°C) in dioxane to $CH_2=C(C_6H_5)CH_2COOH$ (IV) and isomeriza-

Card 1/3

POLAND / Organic Chemistry. Organic Synthesis. G

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 39575.

Abstract: of (II) (in hexane, ~ 20°C) and produces $C_6H_5CH=CHCH_2C(CN_2)OCOCN$ (VIII), yield 72%, M.P. 106-111°C. The structure of (VIII) was verified by the experiments of degradation, hydrolysis and reaction of (VIII) with aniline, phenylhydrazine and NH_4OH, causing a formation of the related products. The mechanism of the interaction between (I) and (VII) with (II) is explained by the authors on the basis of the hyperconjugation theory.

Card 3/3

AKHMATOVICH, O.

POLAND / Organic Chemistry. Organic Synthesis. G

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 39559.

Author : Akhmatovich, O., Leplyavy, M.
Inst : Polish Academy of Sciences.
Title : The Chemistry of Cyanocarbonyls. II. The Action of Cyanocarbonyl upon 1,1-Diphenylethylene. Formation of Compounds Assumed to be Derivatives of Cyclopropane.

Orig Pub: Byul. Pol'sk. A.N., 1955, Otd. 3,3, No 10, 543-548.

Abstract: The reaction between $CO(CN)_2$ with 1,1-diphenylethylene in hexane solution at 20°C resulted in the formation of 2-hydroxy-2,3-dicyano-1,1-diphenylcyclopropane (I), yield more than 60%, M.P. 108°C, and compound $C_{30}H_{20}N_2$, yield 10%, M.P. 173°C, and $C_{28}H_{24}$, yield ~3%, M.P. 72°C. The reaction probably proceeds with an intermediate formation of a

POLAND / Organic Chemistry. Organic Synthesis. G

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 39559.

Abstract: normal product of addition in the double bond $(C_6H_5)_2C(CH_2CN)$. (COCN). The authors express the assumption that such a reaction type is a general one for olefines with the exception of the cases of superconjugation. (Compare Comm. I, R. Zh. Khim., 1958, 39575). The structure of (I) is verified by the following transformations:

At the hydrolysis of (I) with an aq. KOH solution, 2 moles of NH_3 are liberated and the K-salt of 1, 1-diphenyl-2-hydroxycyclopropane-2,3-dicarboxylic-2,3 acid (II) is formed or, at milder conditions, — monoamide of (II), (III). The Ag-salt of (II)

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POLAND / Organic Chemistry. Organic Synthesis. G

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 39559.

Abstract: produces with methyl iodide a dimethylether of II (IV), M.P. 125-127°C.(IVa).

The attempts to separate a free (II) caused its cyclolactyl rearrangement into an α-keto-β,β-diphenylglutaric acid which is immediately transformed into lactol (V), M.P. 163.5-165°C, with the following structure, $(HOOC)(HO)CC(C_6H_5)_2CH_2COO$.

The acetate of V, M.P. 144-145°C. When (V) is treated with $SOCl_2$ and methanol, a lactone of a monomethyl ether of α-methoxy-α-hydroxy-β,β-diphenyl glutaric acid, M.P. 87.5-89°C. Decarboxylation of (V) leads to the formation of the lactone γ,γ-dihydroxy-β,β,diphenyl propionic acid, M.P. 108.5-110.5°C.

Card 3/5

POLAND / Organic Chemistry. Organic Synthesis. G

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 39559.

Abstract: When (III) is acidified, a cyclolactone rearrangement takes place and an amide (V) is formed, M.P. 207-209°C, which is converted into (V) under treatment with KOH and acidifying. When the K-salt of (V) is heated in an alkaline solution, the reverse cyclolactone rearrangement occurs with the formation of the K-salt of (II).

When (V) is treated in cold water with an 1% alc. solution of HCl, (IV) is produced (M.P. 124.5-125.5°C (IVb), which causes a depression of the melting point of a mixture with (IVa)).

Card 4/5

POLAND / Organic Chemistry. Organic Synthesis. G

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 39559.

Abstract: (IVb) produces an acetate with the M.P. of 103-105°C, whereas (IVa) is not being acetylated. (IVa) and (IVb) probably are cis- and trans-isomers respectively of (IV).

AKHMATSHIN, M.a podpolkovnik

Onto a modern basis. Voen. znan. 42 no.2:18-19 F '66. (MIRA 19:1)

1. Zamestitel' nachal'nika shtaba grazhdanskoy oborony Kiyeva i Kiyevskoy oblasti.

AKHMATULLINA, N.B.; ZHUMATOV, Kh.Zh.

One method of studying the initial stage of the formation of the influenza virus in the cell. Vest. AN Kazakh. SSR 21 no.9:74-76 S '65. (MIRA 18:9)

ZHUMATOV, Kh. Zh.; AKHMATULLINA, N.B.; AKBERDIN, S.U.

Further investigation of poliomyelitis in Kazakhstan. Izv. AN Kazakh. SSR. Ser. med. i fiziol. no. 1:79-85 '60. (MIRA 13:10)
(KAZAKHSTAN—POLIOMYELITIS)

AKHMATULLINA, N.B.

Virusological and serological study of children in contact with poliomyelitis patients. Izv. AN Kazakh. SSR. Ser. med. i fiziol. no. 2:6-9 '60. (MIRA 13:10)
(KAZAKHSTAN--POLIOMYELITIS)

ZHUMATOV, Kh.Zh.; AKHMATULLINA, N.B.

Analysis of the changes of humoral immunity in children after the peroral immunization with live vaccine against poliomyelitis. Trudy Inst. mikrobiol. i virus. AN Kazakh. SSR 5:148-156 '61. (MIRA 15:4)

(Poliomyelitis--Preventive inoculation)

ZHUMATOV, KH.ZH.; AKHMATULLINA, N.B.

Results of virological and serological investigations of persons suspected to be sick with poliomyelitis and persons in contact with them in 1956-1960. Trudy Inst.mikrobiol.i virus.AN Kazkah.SSR 6:185-192 '62.

(POLIOMYELITIS)

AKHMATULLINA, N.B.

Investigations on the dynamics of virus-neutralizing antibodies in children with poliomyelitis. Trudy Inst.mikrobiol.i virus.AN Kazkah.SSR 6:193-202 '62. (MIRA 15:8)
(POLIOMYELITIS) (ANTIGENS AND ANTIBODIES)

AKHMATULLINA, N.B.

Phagocytosis of poliomyelitis viruses. Vest. AN Kazakh.SSR 20 no.11:73-75 N '64. (MIRA 18:2)

ACCESSION NR: AR4015661 S/0081/63/000/021/0319/0319

SOURCE: RZh. Khimiya, Abs. 21L48

AUTHOR: Ivashentsev, Ya. I.; Akhmazova, N. A.

TITLE: Breakdown of ilmenite concentrate in a stream of dissociated ammonium chloride

CITED SOURCE: Tr. Tomskogo un-ta, v. 154, 1962, 184-188

TOPIC TAGS: ilmenite, ilmenite concentrate, anhydrous ferric chloride, titanium concentrate, ilmenite concentrate breakdown

ABSTRACT: The authors studied the breakdown of 2 specimens of ilmenite concentrate when heated (400-600C) in a stream of dissociated NH_4Cl. It was established that $FeCl_3$ ($FeCl_2$), as well as TiO_2, can be isolated in relatively pure form when ilmenite concentrate is subjected to the action of dissociated NH_4Cl at 600C or above. Authors' summary.

DATE ACQ: 09Dec63 SUB CODE: ML, CH ENCL: 00

Card 1/1

AKHMECHET, L.S.; BLOKH, O.I.; MATSIYEVSKIY, A.G.; NESTEROV, Ye.N.; SVIRIDENKO, S.Kh.

Selecting parameters for vibration bin feeds. Stan. i instr. 30 no.2: 8-9 F '59. (MIRA 12:3)

(Machine tools--Attachments)

80119

S/121/60/000/01/01/001

25.2000

AUTHORS: Akhmechet, L.S., Blokh, O.I., Shorgin, V.S.

TITLE: Magnetostriction Drive of Microfeeds

PERIODICAL: Stanki i instrument, 1960, Nr 1, pp 18 - 20

TEXT: The authors point out that the machining accuracy of parts depends to a great extent on the possibility of very small displacements of tools and blanks. Small feeds make it even possible to correct the setting of tools in order to compensate for the wear. With the aid of magnetostriction a microfeed drive is obtained which ensures stable minor displacements of tools and blanks. The principal layout of the device, based on the change in the length of a ferromagnetic nickel rod in direction of the induced magnetization, is shown in Figure 1. A description of the magnetostriction drive (magnetostrictor) is given. By using microfeed drive it is possible to effect a successive displacement of the movable parts of the machine tool during an automatic operation cycle. The minimum feed necessary for such a displacement corresponds to the magnetostrictive elongation of the nickel rod during one cycle of magnetization, while the total displacement of the movable machine tool part during repeated cycles of magnetization is limite only by the free length of the rod. The operational characteristic

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Magnetostriction Drive of Microfeeds

of the magnetostriction drive is determined by the following functions: 1) the variation in magnitude of magnetostrictive elongation due to different physical-chemical properties of the rod material and variations in magnetization of the coil field; 2) the effect of the resisting force on the magnitude of microfeed. Figure 2 shows the ratio of relative magnetostrictive elongation $\lambda = \frac{\Delta l_m}{L}$ for various materials.

The authors state that the limiting values of relative elongation of various ferromagnetic materials can be increased by a suitable thermal or mechanical treatment of the rod blanks. The operative qualities of the magnetostriction drive with nickel rod were analyzed on a special device (Figure 3a) which was designed and constructed at the Odessa SKB-3 Laboratory. The electric circuit of the device is shown in Figure 3b. Lever-type microgages (with graduation values of 0.001 mm) were used as measuring instruments, recording the motion of the rod. Besides, armature of electroinductive pick-ups, connected to the phase-sensitive circuit, were in contact with the two faces of the rod. Figure 4 shows the function characterizing the variation in magnitude of magnetostrictive elongation when the magnetization of the coil field is varied, in the case of absence of axial resisting forces. The effect of the force Q, gripping the magnetostrictor rod during the feed action, is illustrated by a graph shown in Figure 5. It is evident from the Graph that,

if the resisting forces are increased, the magnetostrictive elongation of the rod is reduced according to a law approaching that of linearity. The authors emphasize that an important operative characteristic of the machine tool is the stability of the microfeed. Repeated measurements of rod elongation at different intensities of the magnetic field and duration of cycle (Figure 6) showed that the limit of errors of microfeed does not exceed 10%, while the average magnitude of errors of some displacements amounted to approximately 2 - 3%. Figure 7 shows an oscillograph recording of the microfeed process. As a result of their investigations the authors draw the following conclusions: 1) At a constant load Q, generated by the forces resisting to the feed, it is necessary to select the cross-section of the nickel rod in such a way that the rated stress in it should not exceed $\sigma = 3 \div 4$ kg/mm^2. In this case that load does not lead to substantial variations of the magnetostrictive effect, and the feed magnitude during each cycle is determined by the field intensity of the coil; 2) if during the operation of the feed mechanism variable resisting forces possibly arise, the variable component of the rated compressive stress of the rod should be less than 0.5 kg/mm^2; 3) the magnetizing coil should ensure a

field intensity in the magnetic circuit of approximately 60 - 80 ampere turns/cm; 4) in order to prevent a substantial thermal elongation of the rod, the current density in the coil winding should not exceed 2 amp/mm^2. Four graphs, 1 circuit, 1 photograph, 1 diagram and 1 oscillogram.

AKHMECHET, L.S., inzh.

Experimental investigation of a device for vertical lubrication.
Vest.mash. 40 no.9:41-43 S '60. (MIRA 13:9)
(Lubrication and lubricants)

PHASE I BOOK EXPLOITATION SOV/6209

Akhmechet, Leonid Samoylovich, Leonid Vladimirovich Vayser, and Arkadiy Romanovich Chudnovskiy.

Primeneniye plasticheskikh mass v tekhnologicheskoy osnastke (The Use of Plastics in Engineering Equipment) Moscow, Mashgiz, 1962. 155 p. 10,500 copies printed.

Reviewer: L. S. Pilipenko, Engineer; Ed.: A. I. Bykovskiy, Engineer; Tech. Ed.: M. S. Gornostaypol'skaya; Chief Ed. (Southern Division, Mashgiz): V. K. Serdyuk, Engineer.

PURPOSE: This book is intended for technical personnel in machine plants engaged in the design and manufacture of engineering equipment.

COVERAGE: The book deals with the use of plastics in the manufacture of engineering equipment, such as molds, dies, fixtures, and tools. Suggestions are made on how to design, manufacture, and use the plastic

Card 1/4

MAKAROV, A.A., inzh.; AKHMECHET, L.S., inzh.

New machine tools designed by the Special Design Bureau 3. Mashinostroenie no.1:87-89 Ja-F '62. (MIRA 15:2)

1. Spetsial'noye konstruktorskoye byuro No.3, Odesskiy sovnarkhoz.

(Machine tools—Design)

S/191/63/000/003/011/022
B101/B186

AUTHORS: Akhmachet, L. S., Vayser, L. V., Chudnovskiy, A. R.

TITLE: Effect of fillers on the properties of plastic compositions used for producing industrial equipment

PERIODICAL: Plasticheskiye massy, no. 3, 1963, 37-38

TEXT: Without specifically mentioning details of their own publication, the authors give a review of various filler and of their application in the West, based on publications in the "Mashinostroyeniye za rubezhom" and "Vestnik mashinostroyeniya". There are 2 tables.

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SVIRIDENKO, S.Kh.; AKHMECHET, L.S.; VOLKOV, A.A.; MEYSTEL', A.M.; MIZHEVSKIY, L.L.; POLYAKOV, L.M.; RASHKOVICH, M.P.; SRIBNER, L.A.; KHVALOV, Yu.G.; SHPIGLER, L.A.; SHRAGO, L.K.; ORLIKOV, M.L., inzh., retsenzent; SVECHNIKOV, L.V., inzh., retsenzent; MATSIYEVSKIY, A.G., inzh., red.

[Elements of the automation of machine tools] Elementy avtomatizatsii metallorezhushchikh stankov. Moskva, Mashgiz, 1964. 210 p. (MIRA 17:12)

AKHMECHET, L.S.; VOLKOV, B.K.; KRICHEVER, A.[illegible]

Indicating device for measuring dimensions of easily deformed parts. Izm. tekh. no.5:8 My '64 (MIRA 17:7)

SANDLER, N.I.; AKHMECHET, Zh.N.

Reciprocal lattice photography with an independently chosen standard at low temperatures. Zav. lab. 24 no.5:647-648 '58. (MIRA 11:6)

1. Ukrainskiy nauchno-issledovatel'skiy institut metallov.
(Metallography)

AKHMEDBABAYEV, M.Kh.; ARIFDZHANOV, K.A.; BELOUSOV, N.A.; BELYAKOV, S.P.; ZOTOV, V.G.; ISAYEVA, Z.D.; MAKHMUDOV, I.A.; ISHCHENKO, F.S.; KRASIL'NIKOV, Ya.A.; NIKOL'SKIY, I.P.; NETSETSKIY, A.M.; PERGAT, F.F.; PAVLOVSKAYA, M.D.; SAMSONOV, L.S.; POLIZHAYEV, A.I.; SMIRNOV, F.Ye.; SABININ, M.N.; SHUTYAYEV, N.A.; CHIZHIK, V.I.; KARPENKO, P.M.; IMEROV, A.I.

Mikhail Aleksandrovich Nenetskii; obituary. Veterinariia 37 no.10:94 O '60. (MIRA 15:4)
(Nenetskii, Mikhail Aleksandrovich, 1899-1960)