

L 52221-65

ACCESSION NR: AP5017116

noradrenalin action is characterized by the prolonged increase in renal blood flow, which develops earlier than in the adrenalin experiment, and is not accompanied by a second wave of increased blood pressure.

Orig. art. has: 3 graphs.

ASSOCIATION: Laboratoriya fiziologii vegetativnoy nervnoy sistemy i nervnoy sistemy i nervnoy trofiki Instituta fiziologii im. I. P. Pavlova AN SSSR, Leningrad (Laboratory of the Physiology of the Autonomous Nervous System and Nerve Trophics, Institute of Physiology, AN SSSR)

SUBMITTED: 30 Jan 54

INCL: 00

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NR RES SOV: 006

OTHER: 019

JPRS

gsk
Card 2/2

ZAKHARZHEVSKAYA, N.P.

Changes in renal vascular resistance under the effect of adrenal medullary hormones. Fiziol.zhur. 51 no.7:814-820 '65.

(MIRA 18:10)

1. Laboratoriya fiziologii vegetativnoy nervnoy sistemy i nervnoy trofiki Instituta fiziologii imeni I.P.Pavlova AN SSSR, Leningrad.

VOL'MAN, I.I.; ZAKHARZHEVSKAYA, R.V., iskusstvoved

Trends in knitwear design. Tekst.prom. 19 no.4:51-54 Ap '59.
(MIRA 12:6)

1. Glavnyy khudozhnik Doma modeley trikotazhnykh izdeliy (for Vol'man).
(Knit goods industry)

ZAKHARZHEVSKAYA, V. N.

30826. ZAKHARZHEVSKAYA, V. N. AND YELIN, L. V.

Elektricheskoye soprotivleniye plenok smazochnogo masla (Mashinnoye 2)
i transformatornogo. Nauch. trudy (Odes. in-t inzhenerov mor. flota), vyp. 8,
1949, s. 120-34.

ZAKHARZHEVSKAYA, YE.G.

KOZLOV, V.A., inzhener.; AYZENBERG, B.I., kandidat tekhnicheskikh nauk.;
BOBOVICH, L.I., inzhener.; ZAKHARZHEVSKAYA, Ye.G., inzhener.;
BARANOV, B.M., inzhener.

Urgent problems in the theory of urban networks. Elektrichestvo
no.3:77-80 Mr '57. (MLRA 10:4)

1. Leningradskaya kabel'naya set' (for Kozlov).
 2. Leningradskiy inzhenerno-ekonomicheskii institut im. Molotova (for Aysenberg).
 3. Uzbekenergo (for Bobovich, Zakharzhevskaya).
 4. Moskovskaya kabel'naya set' (for Baranov).
- (Electric networks)

ZAKHARZHEVSKIY, V.B.

Changes in the coronary blood flow during the action of food
conditioned stimuli. Zhur. vys. nerv. deiat. 15 no.3:453-457
My-Je '65. (MIRA 18:6)

1. Laboratoriya kortiko-vistseral'noy fiziologii i patologii
Instituta fiziologii im. I.P. Pavlova AN SSSR.

ZAKHARZHEVSKIY, V.B.

Change in unconditioned reflexes from the chemoreceptors of the intestine in cats following a collision of alimentary and defensive reactions. Trudy Inst. fiziol. 9:350-359 '60. (MIRA 14:3)

1. Laboratoriya kortiko-vistseral'noy patologii (zaveduyushchiy - I.T.Kurtsin) Instituta fiziologii im. I.P.Pavlova.
(REFLEXES) (INTESTINES)

L 36812-66

ACC NR: AP6024403

SOURCE CODE: UR/0219/66/062/007/0112/0114

28
B

AUTHOR: Zakharzhevskiy, V. B.; Olesk, A. O.

ORG: Laboratory of Cortical and Visceral Physiology and Pathology, Institute of Physiology im. Pavlov, AN SSSR, Leningrad (Laboratoriya kortiko-vistseral'noy fiziologii i patologii Instituta fiziologii AN SSSR)

TITLE: Use of highly sensitive Se-Ca photoresistors in studying peripheral blood circulation in animals and humans

SOURCE: ²²Byulleten' eksperimental'noy biologii i meditsiny, v. 62, no. 7, 1966, 112-114

TOPIC TAGS: photoresistor, blood circulation, animal physiology, human physiology, biosensor, plethysmography/ ²⁶SFZ-1 photoresistor, ²⁶SFZ-2 photoresistor ¹⁰

ABSTRACT: New Soviet equipment using semiconductor photoelements to study blood circulation (photoplethysmography) is described. The advantages of Se-Ca photoresistors (maximum sensitivity in the range between the visible and near-IR regions occupied by the absorption spectrum of blood, higher sensitivity) over S-Ca and S-Pb photoelements are pointed out. The best Soviet Ca-Se photoresistors for this purpose are the SFZ-1 and SFZ-2. The SFZ-2 Se-Ca photoresistor is light in weight, small (8 x 13 x 3.5 mm), has a large photosensitive surface and sealed photosensitive layer, and a low working voltage (2-5 v). Two photoplethysmographic sensors incorporating

Card 1/3

UDC: 612.13.014.421.7

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ACC NR: AP6024403

the SFZ-2 photoresistor are illustrated. The size and weight of these sensors are

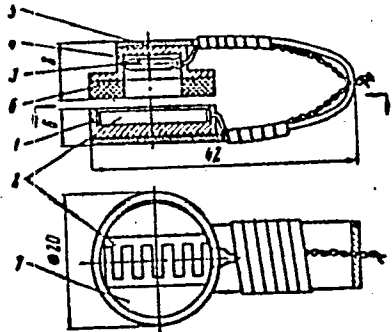


Fig. 1. Earlobe pulse sensor: above, side view; below, looking down on the lower arm of the sensor

- 1, 4 - Hollow plexiglas disks;
- 2 - photoresistor; 3 - lamp;
- 5 - plexiglas bow joining the two parts of the sensor; 6, 7 - foam rubber pads.

Card 2/3

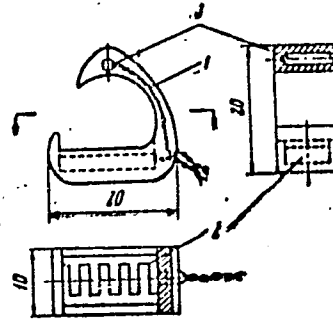


Fig. 2. Sensor for externalized loop of carotid artery: top left, side view; top right, end view; below, looking down on the lower arm of the sensor

- 1 - Plexiglas body; 2 - photoresistor;
- 3 - lamp.

I. 36812-66

ACC NR: AP6024403

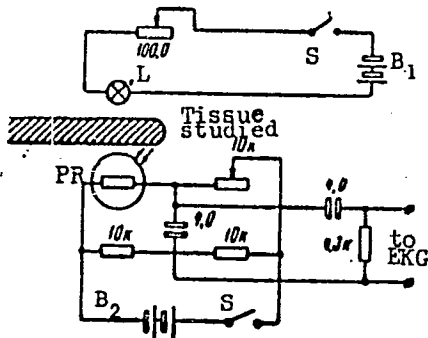


Fig. 3. Schematic diagram of circuit for photoelectric volumetric pulse recorder

L - Lamp; PR - photoresistor; B₁ - lamp battery; B₂ - Wheatstone bridge circuit battery; S, S - switches.

greatly reduced by using plexiglas for the housing. They are highly sensitive and easy to install, and are unaffected by movements of the experimental subject. Orig. art. has: 2 figures. [DP]

SUB CODE: 06/ SUBM DATE: 23Nov64/ ORIG REF: 002/ OTH REF: 007/ ATD PRESS: 5038

Card 3/3

ZAKHAROV, M. S.

Some information on the evolution of southern cyclones. Trudy
ZakNEGAI no. 19:33-39 '65. (MIRA 18:12)

ZAKHASHVILI, M. A.

Author: Khmaladze, G. N.
Date: 207/30-53-2-24/75
Title: Scientific Meeting at the Tbilisi Scientific Research Institute of Hydrometeorology (Nauchnaya sessiya v Tbiliskom nauchno-issledovatel'skom gidrometeorologicheskom institute)

Periodical: Meteorologiya i gidrologiya, 1959, Nr 2, pp 70 - 71 (USSR)
Abstract: In May 1959 the Tbiliskiy nauchno-issledovatel'skiy gidrometeorologicheskii institut (Tbilisi Hydrometeorological Scientific Research Institute) held a meeting in which the following representatives participated: Representatives of the Tsentral'nyy institut prognozov (Central Forecasting Institute), Obshchaya geofizicheskaya observatoriya (Main Geophysical Observatory), and the local administrations of the hydrometeorological stations of the Tbilisi MICE. On the occasion of the fifth anniversary of the Tbilisi MICE the director of the Institute V. P. Kozlovskiy held a speech commemorating the event. Dr. P. Kozlovskiy spoke on the character of temperature distribution and the circulation of the atmosphere above the Antarctic. L. I. Gvishvili and Ye. A. Espevariadze spoke on the characterization of the

Card 1/3

circulation processes above Transcaucasia. M. A. Zakhashvili reported on the typification of synoptical processes carried out by him. E. J. Gvishvili read two papers on theoretical questions of dynamic meteorology. V. M. Gvishvili and V. P. Kozlovskiy spoke on the present state of the fight against hail. L. I. Espevariadze spoke on the great amounts of precipitation on East Georgia. L. I. Gvishvili on the character of the synoptical visibility in the case of precipitation and fog in the course of 24 hours of the precipitation in Georgia in the course of 24 hours. V. P. Kozlovskiy on the wind energy reserves of Georgia. M. A. Zakhashvili on radiation and heat balances in the Alpine zone of the Caucasus. Ye. E. Dvali on the radioactivity of the atmosphere in Tbilisi and Tusheti. Ya. A. Tutsikidze on the albedo of different natural surfaces. Sh. G. Kharabelli (USSR of the Gruzinskaya SSR) on the ground temperature conditions in Tbilisi. V. Sh. Tsunaya on the method developed by him for forecasting the number of days with ice mass. V. P. Kozlovskiy on a method for the calculation of the volume of rain water supply for spring floods. G. P. Pastukhova (USSR of the Azerbaidzhan SSR) on the use of indicators of the atmospheric circulation in hydrological forecasts. The representative of the USSR of the Armanakaya SSR reported on the characteristics of the formation of spring floods on the rivers of Armenia. A. Kozlovskiy (USSR of the Armanakaya SSR) pointed to the special danger of the water supply for spring floods on the rivers of Armenia. The representative of the USSR of the Armenia SSR reported on the humidity in the soil below grain cultures. E. P. Stolygin and M. A. Zakhashvili spoke on the periods set for the opening of the grain fields in Transcaucasia. G. M. Kandelaki, L. A. Emeljanova (USSR of the Armanakaya SSR), and E. P. Chernyab spoke on the microclimate conditions of the Lankhutiakiy massif in the Armanakaya SSR. In all, 27 papers were read.

Card 2/3

Card 3/3

L 2807-66 EWT(1)/FCC GW

UR/3061/65/000/017/0049/0055

ACCESSION NR: AT5021764

AUTHOR: Zakhashvili, M. A. 44, 55

23
20
31

TITLE: On a forecast of the movement of southern cyclones 12, 14, 55

SOURCE: Tiflis. Zakavkazskiy nauchno-issledovatel'skiy gidrometeorologicheskii institut. Trudy, no. 17 (23), 1965. Atmosfernaya tsirkulyatsiya i gidrometeorologicheskii rezhim Zakavkaz'ya (Atmospheric circulation and hydro-meteorological conditions of Transcaucasia), 49-55

TOPIC TAGS: cyclone, weather forecasting, atmospheric circulation, atmospheric, troposphere

ABSTRACT: The movement of southern cyclones in the direction of Transcaucasia is analysed, and a relationship between the direction of movement of the cyclones and the location of the prevailing current in the troposphere is obtained. The work was done to obtain additional prognostic characteristics for the movement of southern cyclones. Archive material for 1950-1959 was used to check the steering-current law for examples of the movement of southern cyclones. In all, 86 cases of cyclone movement were checked. It was found that, in the movement of a cyclone separated into a number of centers, the directions of the isohypses at AT 700

Card 1/2

L 2807-66

ACCUSSION NR: AT5021764

or AT⁵⁰⁰ coincided with the direction of the isohypses at OT⁵⁰⁰₁₀₀₀ in the overwhelming majority of cases. Several practical suggestions are given for the use of the steering-current law for southern cyclones. One of these states that, in practice, the direction of the isohypses passing directly over the center of a cyclone near the ground can be taken as the direction of the steering current. Orig. art. has: 2 tables. 3

ASSOCIATION: Zakavkazskiy nauchno-issledovatel'skiy gidrometeorologicheskii institut, Tiflis (Transcaucasian Scientific Research Hydrometeorological Institute)


SUMMITTED: 00

ENCL: 00

SUB CODE: ES ⁴⁴ 83

NO REF SOV: 007

OTHER: 000


Card 2/2

ZAKHASHVILI, M.A.

Forecasting the approach of baric systems in Transcaucasia. Trudy
Tbil.NIGMI no.5:42-52 '59. (MIRA 13:6)
(Transcaucasia--Cyclones)

ZAKHASHVILI, M.A.

~~Basic trajectory types of southern cyclones moving toward~~
Transcaucasia. Trudy Tbil. NIEMI no.2:78-95 '57. (MIRA 11:4)
(Transcaucasia--Cyclones)

ZAKHAROV, P. I.

Aerodynamic conditions for the origin of frosts in the Georgian
S.S.R. Trudy TbilNIGMI no. 15:3-20 '64.

(MIRA 18:10)

ZAKHASHVILI, M.A.

Forecasting the transference of southern cyclones. Trudy
TbilNIGMI no.17:49-55 '65. (MIRA 18:11)

Zakhaivalinskiy, M. N.

VOLKOV, N. N. ZAKHAIVALINSKIY, M. N.

Ternary Mutual System Consisting of Lithium and Sodium Fluorides and Bromides
Izv. Fiz.-Khim. N.-I In-Ta Pri Irkutskom Un-Ta, Vol 2, No 1, 1953, pp 69-71

Investigated the above system using a visual-polythermal method. The surface of the liquidus curve for the system includes three areas of crystallization: LiF, NaF, and area of solid solutions of LiBr and NaBr. (RZhKhim, No 21, 1954).

SO: Sum. No. 639, 2 Sep 55

ZAKHAROVA, N.N.

4

Peculiarities of behavior of thin layers of polymers of vinyl ethers and their solutions on metallic surfaces. B. V. Deryagin and N. N. Zakharenko. *Issledovaniya v Oblasti Vysokomolokul. Soedinenii, Diklady G. N. Korol. Vysokomolekul. Soedinenii, Akad. Nauk S.S.S.R.* 1949, 222-37. The behavior of polyvinyl ethers and their solutions on metallic films was examined by the method of blowing them off a polished plate by means of a collimated air stream (cf. C.A. 43, 2130a). Polyvinyl butyl ether and related substances, in solution, usually show an increase in viscosity with increased distance from a solid surface; the effect may attain 3-4 fold magnitude and extends to 5 μ or beyond. Similar behavior of instability type is shown by a wedge-shaped film of these polymers. Max. instability is found at intermediate contacts, which are generally lower with higher mol. wt. of the polymers. In contrast to common liquids these polymers show instability as a result of shear with film flow; the effect is greater, the longer is the contact of the polymer with the metal. The instability phenomenon is little affected by temp. The results are explainable on the basis of mol. orientation at the interface. The results are shown graphically. G. M. Kosolapoff

①

CA

22

The stability of thin lubricant films deposited on solid surfaces. B. V. Deryagin and N. N. Zakhavaya. *Kolloid. Zhur.* 11, 230-1(1949); cf. *C.I.* 49, 2196, 1949. Lubricant was deposited on solid surfaces and then blown off them so that only a thin wedge remained; its thickness was found interferometrically. The wedge of turbine oil coated Al oleate, Al stearate, or $\text{BuOC}_{11}\text{H}_{23}$ polymer was more stable on steel than on glass or Cr coating. This explains why lubrication of Cr surfaces is difficult.

J. J. Bikerman

4

Temperature dependence of the rate constant on the decomposition of ammonia in the electric discharge. N. N. Zakhayeva. *Zhur. Fiz. Khim.* 23, 379-82 (1949). A glass tube (diam. $d = 3$ cm.) provided with a W wire, $d = 0.02$ mm., along the axis and a W spiral along the wall, was filled with NH_3 at 04 mm. Hg. When the voltage v between wire and spiral was raised, corona discharge started at a v which decreased when temp. T increased (1500 v. at -20° , 900 v. at 190°). The gas pressure decreased during the discharge. The rate const. K had a max. at $10-20^\circ$. The final degree of decompn. of NH_3 was 1 at 10° and 0.0 at -10° and 100° . When the elec. power increased, K passed a max. at 0.5 watts. J. J. D.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

BOOK NUMBER

BOOK NUMBER	ASB-51A	BOOK NUMBER	ASB-51A
CLASSIFICATION	ASB-51A	CLASSIFICATION	ASB-51A
INDEX	INDEX	INDEX	INDEX
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ZAKHAVAYEVA, N.N.

USSR/Chemistry - Plastics

Oct 51

"The Viscosity Properties of Vinyl alkyl ether polymers," M.F. Shostakovskiy, B.V. Delyagin, I.F. Bogdanov, N.N. Zakhavayeva, Inst Org Chem and Inst Phys Chem, Acad Sci USSR

"Zhur Prikl Khim" Vol XXIV, No 10, pp 1063-1070.

Polymers of vinyl alkyl ethers have very favorable temp viscosity curve (index of viscosity). A 2% soln of these polymers strongly reduces metal corrosion.

PA 190711

ZAKHAYAYEV, N. V.

L

A New Method of Determining the Grain-Size and Specific Surface of Powders as Used in Powder Metallurgy. B. V. Deryagin, N. N. Zakhavaev, and M. V. Talaev (Zhur. Tekhn. Fizik, 1955, 25, (6), 881-886).—[In Russian]. The method and apparatus are similar to those developed by D. for appn. to phys. chemistry. Air at low pressure is filtered through the powder, and the resistance to its flow is measured. Obviously, the finer the powder, the greater the resistance. Provided that the pressure of air is low enough for interactions

between air mol. to be \ll interactions between air mol. and powder particles (i.e. the molecular mean free path \gg particle spacing), it is possible to calculate accurately the sp. surface area of the powder. Full aerodynamic theory and description of D.'s apparatus are given. As a test, results on powders of Cu (8-10 μ), Fe (7-12 μ), and Al (60-600 μ) are compared with microscopic measurements. Good agreement is obtained for Cu and Fe. Agreement for the Al powders is had, as they were in the form of spiral-shaped shavings; the microscope measured the overall dimensions, while the physico-chem. method took account of the spaces in the middle of the spirals.—A. F. B.

② Jec

ZAKHAVIYEVA, N.N.

if the pores at. closed, in event every to. outer
face, which partakes in the sorption processes from gas
streams, soln. etc. Sp. surface detns. of similar products
detd. by various methods are compared in a table.

W. M. Strohberg

117

1571

Inst. Phys. Chem., A.S. USSR

ZAKHAYEVA, N.N.

1282 Measurement of the specific surface area of carbon black by Deryagin's method. H. V. DERYAGIN, N. N. ZAKHAYEVA, and M. V. TALAN. Zhur. Priklad. Khim., 1950, 29, 40-52; Chem. Abstr.

1050, 50, 10482. The specific area S_g of carbon black was determined by the Knudsen-flow method. The effect of compaction of the carbon-black diaphragm was determined by compaction with a heavy metal pestle in a glass vessel and with a specially designed press in a metal holder. The curves S_g vs. porosity δ in both filters were identical. S_g rose sharply as δ decreased to about 7. At lower values of δ , S_g remained constant. The results agreed with those obtained by other methods. This method is recommended for its simplicity and for the determination of the strength of carbon black particles.

104
2/11/56

3

GM

ZAKHAVAYEVA N.N.
PHASE I BOOK EXPLOITATION

609

Deryagin, B. V., Zakhavayeva, N. N., Talayev, M. V., and Filippovskiy, V. V.
Opredeleeniye udel'noy poverkhnosti poroshkoobraznykh tel po soprotivleniyu
fil'tratsii razrezhennogo vozdukha (Determination of the Specific Surface of
Powders on the Basis of Filtration Resistance to Rarefied Air) Moscow, Izd-vo
Akademii nauk SSSR, 1957. 59 p. 4,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut fizicheskoy khimii.

Ed. of Publishing House: Shteynbok, G. Yu.; Tech. Ed.: Polesitskaya, S. M.

PURPOSE: This pamphlet presents B. V. Deryagin's method of determining specific surfaces of porous and powdered substances for use in various fields of technology. It is meant for research workers and for workers in industrial laboratories.

COVERAGE: The authors describe Deryagin's method as a simplified and rapid method for the determination of specific surfaces of porous and powdered substances. The method is based on the theory of filtration of rarefied gases through porous media, taking into consideration the Knudsen flow. Chapter one gives a detailed description of the determination of the external specific surface from the steady state flow of rarefied air. The equation for the specific surface is:

Card 1/6

Determination of the Specific Surface of Powders (Cont.)

609

$$S_0 = \frac{24}{13} \sqrt{\frac{2}{\pi}} \frac{\delta^2}{QVMRT} \cdot \frac{\Delta p}{\Delta x}$$

expressed in $[S_0] = \frac{2}{3} \frac{\text{cm}^2}{\text{cm}^3}$;

where S_0 = 2 specific surface (in cm^2 per 1 cm^3 of the porous medium)

Q = quantity of moles of air flowing through 1 cm^2 of a porous layer Δx cm thick per second, with a pressure drop across the porous medium Δp dynes/ cm^2

δ = "porosity" equal the ratio of the pore volume to the total volume of the medium

M = mean molecular weight of air (29.3 g/moles)

R = universal gas constant (in erg/mole. degr.)

T = absolute temperature, °K

Card 2/6

Determination of the Specific Surface of Powders (Cont.)

The apparatus (Fig. 1, 2) was constructed at the Institute of Physical Chemistry, AS USSR. It does not require a skilled operator. The determinations can be accomplished in 20 to 30 minutes with an accuracy of 2 to 5 percent. The average porosity was accepted as 0.5. For certain powders, e.g., quartz, the specific surface value can be related to the 0.5 porosity value after introduction of a correction into the formula

$$S_o = K \frac{h_p \delta^2}{h_q \Delta x}$$

as suggested by S. G. Shvartser. This empirical correction equals 1 for $\delta = 0.5$:

$$S_o = K \frac{h_p \delta^2}{h_q \Delta x} \cdot \frac{\delta}{1-\delta} \quad \text{[Note: } x \text{ missing in text]}$$

where K = constant of the apparatus

h = pressure drop across the sample (in cm)
p

h = flow-meter reading (in cm).
q

Table 6 gives a comparison of results obtained by means of the Deryagin method with Card 3/6

Determination of the Specific Surface of Powders (Cont.)

609

results from several other methods used for the determination of specific surfaces of carbon blacks (investigators: Tesner-Polyakova, Brunauer-Emmet-Teller, Harkins-Jura, Zuyev-Mikhaylov, Laboratory of Academician A. N. Frumkin, Laboratory of Academician M. M. Dubinin).

Part II describes the determination of the total specific surface of porous media and powders based on the transient filtration of rarefied air (Knudsen flow). The total surface includes surface areas of blind pores and channels. The equation used is

$$S_1 = \frac{144}{13} \frac{\delta}{1 - \delta} \frac{L}{x^2} \sqrt{\frac{2RT}{\pi M}}$$

where S_1 = specific surface in cm^2 per 1 cm^3 of the porous medium

δ = porosity, equal void volume/total volume

x = height of the sample (cm)

L = time lag (sec.)

M = molecular weight of the gas (g./moles)

R = universal gas constant (erg/mole.degr.)

T = absolute temperature, °K

and $[S]$ = $\frac{1}{\text{cm}}$.

Card 4/6

Determination of the Specific Surface of Powders (Cont.)

609

The results obtained are in good agreement with results of the nitrogen-adsorption method. Table 7 gives data obtained by means of various methods (transient flow of air, Deryagin's steady state flow, nitrogen-adsorption method). Fig. 9 and 10 show the apparatus used in the transient flow method. Appendix 1 contains detailed instructions and Appendix 2 has diagrams of details of Deryagin's apparatus. Deryagin's method permits the determination of specific surfaces of fine and coarse dispersed materials, and the difference between results obtained from the steady state and transient flows gives the specific surface of blind pores and channels. There are 28 figures, 9 tables, and 18 references, 5 of which are English, 1 German, and 12 Soviet.

TABLE OF
CONTENTS :

Introduction	3
Part I. Method for the Measurement of the Specific Surface by Means of the Steady State Rarefied-gas Flow	7
1. Apparatus and measuring methods	8
2. Selection of the capillaries of the flow meter	16
3. Conditions of the experiment	18
Card 5/6	

Determination of the Specific Surface of Powders (Cont.)	609
4. Calculation of the specific surface	21
5. Determination of the specific surface of coarse powders	
6. Results	29
Part II. Method for Determining the Total Specific Surface of Powders and Porous Materials	32
1. Apparatus and measuring methods	33
2. Measurement of pressure	37
3. Results of measurements	39
Conclusion	41
Bibliography	42
Appendix 1	43
Appendix 2	53
AVAILABLE: Library of Congress	
Card 6/6	BK/fal 9-17-58

ZAKHAVAYEVA, N.N.

AUTHOR: DERYAGIN, B.V., KARASEV, V.V., ZAKHAVAYEVA, N.N., PA - 3563
LAZAREV, V.P.

TITLE: Mechanism of Boundary Lubrication and Boundary Lubrication Layer Properties. (Mekhanizm granichnoy smazki i svoystva granichnogo smazochnogo sloya, Russian)

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 5, pp 1076 - 1086 (U.S.S.R.)

ABSTRACT: There are two different opinions concerning this problem: that of close and that of remote effect. The former is expressed by Bowden (The Friction and Lubrication of Solids, Oxford, II. ed., 1954), the latter by the authors of this paper. The latter opinion is based on numerous theoretical and experimental investigations carried out according to entirely new methods. It says that the influence exercised by the solid wall is continued into the interior of the liquid which in the depth of many molecular layers contains polar molecules, and in this way causes a change of the properties of these layers compared to those of the space phase. This exercises a considerable influence on the boundary lubrication. A short survey of all those facts is given on the basis of which the difference of opinion mentioned above must be decided in favor of the opinion expressed by the authors. Direct measurements of the viscosity in boundary layers of organic liquids, oils, and polymers according to the latest and greatly improved methods showed clearly that in

Card 1/2

PA - 3563

Mechanism of Boundary Lubrication and Boundary Lubrication Layer Properties.

boundary layers with a thickness of up to $0,1 \mu$ viscosity has a value that differs greatly from the space value. These results show that Bowden's opinion is wrong. In order to explain the static friction of solid surfaces separated by a boundary-polymolecular layer, the equation for static friction F is written down according to the two-term friction law:

$$F = \mu (N + Sp_0) = \mu N + S \theta \quad (\theta = \mu p_0)$$

μ is the "true" friction coefficient, N - stress, S the surface of the true and molecular contact, and p_0 - the constant of the pressure difference which measures the molecular force of attraction acting upon the surface unit of the true and molecular contact. Bowden explains frictional phenomena only with the help of the second term of this formula, and this is his mistake, for it is just the second term that explains the existence of static friction and confirms Amanzon's law of friction. (With 12 illustrations and 14 Slavic references)

Institute for Physical Chemistry, Moscow

ASSOCIATION:
PRESENTED BY:
SUBMITTED:
AVAILABLE:
Card 2/2

1.11.1956
Library of Congress

DERYAGIN, B.V.; ZAKHAVAYEVA, H.N.; TALAYEV, M.V.; LOPATINA, A.M.

Apparatus for determining the filtration coefficient and capillary permeability of porous and dispersed bodies. Trudy Inst. fiz. khim. no.6:123-130 '57. (MIEA 11:10)
(Capillarity--Measurement)

DERYAGIN, B.V.; ZAKHAVAYEVA, N.N.; TALAYEV, M.V.; FILIPPOVSKIY, V.V.

Methods and apparatus for measuring the specific surface (or
dispersity) of porous bodies and dispersed materials by the
filtration rate of rarefied air. Trudy Inst. fiz. khim. no.6:
131-139 '57. (MIRA 11:10)
(Porosity--Measurement)

DERYAGIN, B.V.; ZAKHAVAYEVA, N.N.; FILIPPOVSKIY, V.V.; TALAYEV, M.V.

Determining total specific surface areas of powdered and porous bodies [with summary in English]. Inzh.-fiz.zhur. 1 no.8:98-101 Ag '58. (MIRA 11:8)

1. Institut fizicheskoy khimii AN SSSR, Moskva.
(Surfaces--Measurement)

18.6100

66300

SOV/136-59-11-12/26

AUTHORS:

Deryagin, B.V., Yermin, V.N., Grechnyuk, R.L.,
Zakhavayeva, N.N., Filippovskiy, V.V., Funke, V.F.
and Lopatina, A.M.

TITLE:

Determination of the Specific Surface Area of Powders
in the Production of Hard Alloys

PERIODICAL:

Tsvetnyye metally, 1959, Nr 11, pp 55-60 (USSR)

ABSTRACT:

This work has been carried out in order to see whether
it is possible to determine more accurately the
specific surface of powders by using relatively simple
methods. The following gas porosity methods were
used: Carman's method, using Poiseil's system of gas
flow through a layer of powder, and B.V. Deryagin's
method with Knudsen's (molecular) system. The
results of the determination of the specific surface
area by the gas porosity methods were compared with
those of the methyl alcohol vapour adsorption method.
The low temperature adsorption of nitrogen method used
by Brunauer (Ref.1) was used as the control method for
the determination of the specific surface area of
powders of below 10 μ grain size. The specific surface
area of coarser powders was calculated from their

Card 1/5

4

3

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SOV/136-59-11-12/26

Determination of the Specific Surface Area of Powders in the Production of Hard Alloys

granulometric compositions which can be determined by means of a microscope. In this article the practical results of the application of the four above methods for the determination of the specific surface area of powders in the manufacture of hard alloys are given. The determination of the specific surface area of H_2WO_4 , WO_3 , W, WC, TiO_2 ; TiCWC, Co powders and a VK6A mixture (mixture of WC and 6% Co powders) using Poiseil's system of gas flow across the specimen (in the form of a compressed tablet of powder) was carried out in an apparatus designed for the measurement for the specific surface area of powders by Carman's method. In practice the results of the determination of the specific surface area are usually converted to average diameter or grain size, assuming that the particles have a spherical shape. In Table 1, grain sizes of powders are shown for different porosities. The results of determination of the specific surface area of a few powders in the manufacture of hard alloys

Card 2/5

4

66300

SOV/136-59-11-12/26

Determination of the Specific Surface Area of Powders in the
Production of Hard Alloys

by Deryagin's method for different porosities and different weights are shown in Table 2. The results of determination of the surface area of H_2WO_4 , WO_3 , W, WC, TiO_2 , TiCWC, Co, VK6A powders by gas porosity methods, using Poiseil and Knudsen (Deryagin's instrument) systems of gas flow across the specimen, were compared with the results of adsorption determinations. Low temperature adsorption of nitrogen (BET method) was used as the control method (Table 3). The granulometric composition of tungsten W_{10} powder (small surface area, average diameter = 28μ) was determined by means of an optical microscope at a magnification of x600 (the determination of the specific surface area of such coarse powder by the nitrogen adsorption method is inaccurate). The results are shown in Table 4. The authors arrive at the following conclusions: 1. The method of nitrogen adsorption, although sufficiently accurate, cannot be widely used for the determination of the specific surface of powders because of its clumsiness and the complexity of its

Card 3/5

4

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SOV/136-59-11-12/26

Determination of the Specific Surface Area of Powders in the
Production of Hard Alloys

apparatus. Besides, any adsorption method giving the total surface area of particles gives an incorrect powder grain size value in the case of particles with internal pores. This method proved to be useful for the selection of a simpler and easier method, by comparing the values of specific surface obtained by this method with those obtained by other simpler methods. 2. It has been shown that the methods and instruments which are based on the filtration of air at atmospheric pressure and use Cozeni-Carman's formula, give incorrect lower values for the specific surface area of powders of high and medium dispersion. These methods can only be used for the determination of the specific surface area of coarsely dispersed powders. 3. The determination of the specific surface area of powders by the resistance to filtration of discharged nitrogen (Deryagin's method) is the most convenient. This method and the apparatus based on it, enable the external specific surface area of highly dispersed

Card 4/5

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SOV/136-59-11-12/26

Determination of the Specific Surface Area of Powders in the
Production of Hard Alloys

powders of hard alloys to be determined quickly and sufficiently accurately and the average particle size to be calculated. This is extremely important in the manufacture of hard alloys. This method is theoretically well-founded and in practice enables the external specific surface area of different powders of any degree of dispersion from a particle size of 100 μ and less onwards, to be measured without limitation. Therefore this method can be successfully applied for the determination of the specific surface area and particle sizes of powders of hard alloys. There are 4 tables and 8 references, of which 6 are Soviet and 2 English.

Card 5/5

4

DERYAGIN, B.V.; YERMIN, V.N.; GRECHNYUK, R.L.; ZAKHAVAYEVA, N.N.;
FILIPPOVSKIY, V.V.; FUNKE, V.F.; LOPATINA, A.M.

Methods of determining powder dispersivity in the
production of hard alloys. Sbor. trud. VNITTS no.2:158-
171 '60. (MIRA 15:2)

(Powder metallurgy)
(Dispersimetry)

84265

S/170/60/003/010/010/023

B019/B054

21-2181

AUTHORS: Deryagin, B. V., Zakhavayeva, N. N., Lopatina, A. M.

TITLE: A New Method of Determining the Liquid Filtration Coefficient and the Capillary Transfusion Rate in Powdered Materials 18

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 10, pp. 66 - 68 X

TEXT: In a previous paper (Ref. 1), B. V. Deryagin suggested a method of determining quickly the filtration coefficient at the initial stage of transfusion at which filtration is not yet slowed down by the liquid-saturated layers. By this method, filtration is measured by determining the air displaced by the liquid. The authors designed the apparatus shown in Fig. 2 for determining the liquid filtration coefficient according to this idea. The authors give a formula for calculating the filtration coefficient from experimental results. The principal part of the apparatus is a cylindrical cell to locate the sample. This cell is incorporated in a pipe system; water is pressed in on one side of the

Card 1/3

84265

A New Method of Determining the Liquid Filtration Coefficient and the Capillary Transfusion Rate in Powdered Materials S/170/60/003/010/010/023 B019/B054

cell, and the air escaping on the other side is measured. The filtration coefficients measured by the apparatus described are compared with the values calculated theoretically according to Carman (Table 1).

Sample	Particle size in microns	Liquid	K_0	K_1	K_1/K_0
Sand	50.0	Water	$2.49 \cdot 10^{-6}$	$2.54 \cdot 10^{-6}$	1.02
Sand	20.0	Water	$1.18 \cdot 10^{-6}$	$1.25 \cdot 10^{-6}$	1.05
Sand	7.0	Water	$4.10 \cdot 10^{-8}$	$4.07 \cdot 10^{-8}$	0.99
Clay	0.1	CCl_4	$1.20 \cdot 10^{-10}$	$1.10 \cdot 10^{-10}$	0.91
Sand	1.0	"	$2.24 \cdot 10^{-9}$	$2.42 \cdot 10^{-9}$	1.08

K_0 are the experimental, K_1 the theoretical values of the filtration coefficients in the dimension $cm^3 \text{ sec/g}$; each of the experimental values

Card 2/3

S/069/60/022/004/003/003
B019/B054

AUTHOR: Zakhavayeva, N. N.

TITLE: 25 Years of the Laboratoriya poverkhnostnykh yavleniy
Instituta fizicheskoy khimii AN SSSR (Laboratory for Surface
Phenomena of the Institute of Physical Chemistry of the
AS USSR)

PERIODICAL: Kolloidnyy zhurnal, 1960, Vol. 22, No. 4, pp 506-511

TEXT: The 25th anniversary of the foundation of the laboratory mentioned ✓
in the title was celebrated in March 1960; the laboratory is headed by
B. V. Dazyagin, Corresponding Member of the AS USSR. An exposition and a
scientific conference were held on this occasion. The present article
describes the activities of the laboratory, mention being made of the
individual scientists and their special fields as well as the subjects of
the reports delivered at the conference and the names of the lecturers.
The following names are mentioned among the scientists working at the
laboratory: M. M. Kusakov, L. S. Lebedeva, A. S. Titiyevskaya, V. P. Lazarev,
N. N. Zakhavayeva, I. I. Abrikosova, A. D. Malkina, M. F. Futran, T. N.

Card 1/3

25 Years of the Laboratoriya poverkhnostnykh
yavleniy Instituta fizicheskoy khimii AN SSSR S/069/60/022/004/003/003
(Laboratory for Surface Phenomena of the Institute B019/B054
of Physical Chemistry of the AS USSR)

Voropayeva, B. N. Kabanov, G. I. Izmaylova, V. V. Karasev, M. V. Talayev,
S. P. Bakanov, N. A. Krotova, I. N. Aleynikova, L. P. Morozova, P. S.
Prokhorov, L. F. Leonov, I. S. Artemov, G. Ya. Vlasenko, Twenty-eight
scientific lectures were delivered at the conference on the following
subjects: 1) General problems of surface forces, 2) adhesion of polymers,
3) surface forces in thin liquid layers, 4) surface phenomena in disperse
systems, and 5) surface forces in aerosols. V. I. Spitsyn, head of the
institute mentioned in the title, opened the conference. The reports
delivered by B. V. Deryagin, M. M. Kusakov and L. I. Mekenitskaya, L. M.
Shcherbakov, and S. S. Dukhin referred to subject 1). Reports on subject
2) were delivered by N. A. Krotova and L. P. Morozova, V. P. Smilgi, I. N.
Aleynikova, V. L. Vakula, V. Ye. Gui', Khay Yun-tszuy, S. S. Voyutskiy,
and M. S. Metsik. Reports on subject 3) were given by D. M. Tolstoy,
R. L. Kaplan and Lin' Fu-shen', as well as by G. I. Fuks: "Properties of
Solutions of Organic Acids in Liquid Hydrocarbons on the Surface of
Solids", B. V. Deryagin, N. N. Zakhavayeva, S. V. Andreyev, T. N. Voropayeva,
B. N. Kabanov, A. S. Akhmatov and Lyu Chzhau-tszen', V. N. Yashin.

Card 2/3

25 Years of the Laboratoriya poverkhnostnykh
yavleniy Instituta fizicheskoy khimii AN SSSR
(Laboratory for Surface Phenomena of the Institute
of Physical Chemistry of the AS USSR)

S/G59/60/022/004/003/003
B019/B054

A. V. Gorodetskaya, and A. S. Titiyevskaya. Reports on subject 4) were delivered by M. P. Volarovich, M. P. Churayev, S. V. Nerpin, Yu. M. Glazman, B. V. Deryagin, N. N. Zakhavayeva, A. M. Lopatina, N. M. Kudryavtseva, and G. Ya. Vlasenko, on subject 5) by B. V. Deryagin, S. P. Bakanov, S. S. Dukhin, and G. A. Batova: "Transport of Aerosol Particles Due to Diffusion", P. S. Prokhorov, L. F. Leonov, S. P. Bakanov: "On the Influence of Thermal Diffusion on the Behavior of Aerosol Particles in a Heterogeneous Gas Medium"; S. P. Bakanov and G. A. Martynov: "Gravitational Coagulation of Fog Particles", A. I. Storozhilova: "Differential Counter for Nuclei of Condensation", L. F. Leonov, M. V. Velichko, B. V. Deryagin, P. S. Prokhorova: "Diffusion Chamber With Constant Oversaturation".

Card 3/3

ZAKHAVAYEVA, N.N.

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, Izdvo 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

COVERAGE: This is a collection of 25 articles in physical chemistry on problems of surface phenomena investigated at or in association with the Laboratory of Surface Phenomena of the Institute of Physical Chemistry of the Academy of Sciences USSR. The first article provides a detailed chronological account of the Laboratory's work from the day of its establishment in 1935 to the present time. The remaining articles discuss general surface force problems, polymer adhesion, surface forces in thin liquid layers, surface phenomena in dispersed systems, and surface forces in aerosols. Names of scientists who have been or are now associated with the Laboratory of Surface Phenomena are listed with references to their past and present associations. Each article is accompanied by references.

TABLE OF CONTENTS:

Zakhavayeva, N. N. Twenty-Five Years of the Laboratory of Surface Phenomena of the IFKhan SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

3

Card 2/8

Studies in the Field of Surface Forces (Cont.)

SOV/5590

I. GENERAL PROBLEMS OF SURFACE FORCES

Deryagin, B. V. Surface Forces and Their Effect on the Properties of Heterogenous Systems 11

Kusakov, M. M., and L. I. Mekenitskaya. Investigation of the State of Bound Water in Oil Traps 17

Shcherbakov, L. M. General Theory of Capillary Effects of the Second Order 28

Dukhin, S. S. Surface Forces of a Diffusive Nature Close to Liquid Interfaces 38

II. POLYMER ADHESION

Korotova, N. A., and L. P. Morozova. Investigation of the Adhesive Binding of Polymers by Means of the Luminescence Method 48

Card 3/8

Studies in the Field of Surface Forces (Cont.)	SOV/5590	
Voyutskiy, S. S., V. L. Vikula, V. Ye. Gul', and Ho Yün-tsuì. Effect of Molecular Weight, Polydispersion, and Polarity of High Polymers on Their Adhesion to High Molecular Substrata		55
Metsik, M. S. Role of Surface Forces in Mica Crystals		66
Smilga, V. P. Double Layer on the Boundary of Solids Characterized by a Donor-Acceptor Bond		76
Krotova, N. A., and L. P. Morozova. Applying Infrared Spectroscopic Methods to Study the Interaction Between an Adhesive and Its Lining (Polymer - Glass)		83
Deryagin, B. V., and I. N. Aleynikova. Measurement of the True Density of a Double Electric Layer at the Metal - Dielectric Boundary of Separation		89

Card 4/8

Studies in the Field of Surface Forces (Cont.)

SOV/5590

III. SURFACE FORCES IN THIN LAYERS OF LIQUIDS

- Akhmatov, A. S. Fundamental Law of Boundary Friction and Its Physical Basis 93
- Fuks, G. I. Properties of Organic Acid Solutions in Hydrocarbon Liquids at the Surface of Solids 99
- Tolstoy, D. M. Some Considerations on the Regularities of Friction of the First Order 113
- Tolstoy, D. M., R. L. Kaplan, Lin Fu-sheng, P'an Pin-yao. New Experimental Data on External Friction 126
- Deryagin, B. V., N. N. Zakhavayeva, S. V. Andreyev, A. A. Milovidov, A. M. Khomutov. Study of the Flow of Thin Layers of Polymer Solutions By the Cinematographic Method 139
- Voropayeva, T. N., B. V. Deryagin, B. N. Kabanov. Effect of the Concentration of an Electrolyte on the Magnitude of the

Card 5/8

Studies in the Field of Surface Forces (Cont.)	SOV/5590	
Adhesion Process in Platinum Threads		143
IV. SURFACE PHENOMENA IN DISPERSION SYSTEMS		
Volarovich, M. P., and N. V. Churayev. Investigation of Processes of Moisture Movement in Peat By the Radioactive-Isotope Method		149
Nerbin, S. V., and B. V. Deryagin. Surface Phenomena in Soil Mechanics		156
Glazman, Yu. M. Theory of the Coagulation of Lyophobic Sols By Means of Electrolyte Mixtures		166
Deryagin, B. V., N. N. Zakhavayeva, and A. M. Lopatina. Investigating the Filtration of Electrolyte Solutions in High-Dispersion Powders		175
Kudryavtseva, N. M., and B. V. Deryagin. Investigating the Slow Coagulation of Hydrosols With a Flow Ultramicroscope		183
Card 6/8		

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

Talayev, M. V., B. V. Deryagin, and N. N. Zakhavayeva.
Experimental Study of the Filtration of Rarefied Air
Through Porous Bodies in a Transitional Area of
Pressures 187

Deryagin, B. V., N. N. Zakhavayeva, M. V. Talayev, B. N.
Parfanovich, and Ye. V. Makarova. Metallic Device for
Determining the Specific Surface of Powdered and Porous
Bodies 190

V. SURFACE FORCES IN AEROSOLS

Deryagin, B. V., S. P. Bakanov, S. S. Dukhin, and G. A.
Batova. Diffusiophoresis of Aerosol Particles 197

Bakanov, S. P., and B. V. Deryagin. Behavior of a Small
Aerosol Particle in a Nonuniformly Heated Mixture of Gases 202

Strozhilova, A. I. Differential Counter of Condensation
Nuclei 209

Card 7/8

Studies in the Field of Surface Forces (Cont.) 80V/5590

Deryagin, B. V., P. S. Prokhorov, M. V. Velichko, L. F. Leonov. New Method For Obtaining Constant and Homogenous Supersaturations 216

Martynov, G. A., S. P. Bakanov. On the Solution of a Kinetic Equation of Coagulation 220

AVAILABLE: Library of Congress

Card 8/8

JA/rsm/os
10/28/61

17 4430

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29038
S/081/61/000/018/010/027
B104/B101

AUTHORS:

Talayev, M. V., Deryagin, B. V., Zakhavayeva, N. N.

TITLE:

Experimental investigation of the filtration of rarefied air through porous bodies in the pressure transition region

PERIODICAL:

Referativnyy zhurnal. Khimiya, no. 18, 1961, 75, abstract 18B570 (Sb. "Issled. v obl. poverkhnostn. sil". M., AN SSSR, 1961)

TEXT: It is shown that the passage curve of air passing through a porous plate as a function of the mean pressure has a minimum similar to that which occurs if gas flows through capillaries. The minimum is sharp if the porosity coefficient of the body is high, and vanishes if the porosity coefficient decreases. From this it follows that the formula of B. V. Deryagin (Dokl. AN SSSR, 1946, v. 53, 627) is correct in a rough approximation for highly porous bodies even in the pseudo-molecular transition range where no molecular conditions of gas flow are observed. It was found that under pseudo-molecular flow conditions, the gas passage per unit cross section of the porous plate is somewhat lower than that

Card 1/2

29038

S/081/61/000/018/010/027

B104/B101

Experimental investigation of the...

obtained under Knudsen conditions. This is explained by the different character of interaction of the gas molecules with the pore walls during molecular and pseudo-molecular flow. [Abstracter's note: Complete translation.]

X

Card 2/2

S/081/61/000/021/017/094
B102/B138

AUTHORS: Deryagin, B. V., Zakhavayeva, N. N., Andreyev, S. V.,
Milovidov, A. A., Khomutov, A. M.

TITLE: Filming the flow of thin layers of polymer solutions

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 65, abstract
21B525 (Sb. "Issled. v. obl. poverkhnostnykh sil", M.,
AN SSSR, 1961, 139-142)

TEXT: The authors improve on an earlier method (RZhKhim, 1954, no. 12,
30393; 1957, no. 23, 74075) for investigating the rheological properties
of thin layers of solutions by blowing, introducing the use of moving
pictures. The apparatus is described. It gives a complete picture of
the process of blowing the liquid layer. Photographs of the interference
bands are shown for turbine oil, vinyl polymer and its solutions in
turbine oil. [Abstracter's note: Complete translation.]

Card 1/1

S/263/62/000/007/009/014
1007/1207

AUTHORS: Deryagin, B. V., Zakhavayeva, N. N., Talayev, M. V., Parfanovich, B. N. and Makarova, E. V.

TITLE: Metal device for determining the specific surface of powder and porous bodies

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. Ismeritel'naya tekhnika, no. 7, 1962, 26-27, abstract 32.7.175. Collection "Issled. v obl. poverkhnostn. sil". M., AS USSR, 1961, 190-196

TEXT: The 'IFKh SSSR' has designed a device for determining the specific surface of porous bodies, working on the principle of filtration of highly rarified gas under molecular flow conditions. The filtration theory developed by B. V. Deryagin made it possible to derive the formula for determining the specific surface S_0 in m^2/g :

$$S_0 = k \frac{\delta^2 h_d}{h_r \cdot F}$$

where k = the constant of the device; δ = degree of porosity; h_d = pressure drop within the sample; h_r = rheometer readings; F = mass of sample, in g. The device comprises a capillary-type rheometer, a pressure-difference gage, a vacuum chamber for the boat, with a porous baffle plate and a sealing cover and fittings

Card 1/2

Metal device...

S/263/62/000/007/009/014
1007/1207

(cocks and pipes). All components, except the capillary tube, the reading tubes and the vacuum gage, are made of steel or brass. Prior to the determination, the device is completely sealed up, and then the rheometer capillary tube is graduated; a weighed powder sample is introduced in uniform layers in the boat and compacted by means of a special press. The height of the powder layer is measured by means of a vernier gage; the boat then is put into the chamber where a vacuum of the order of 10^{-1} to 10^{-2} mm Hg is produced. An air stream is blown through the sample at a definite flowrate h_r . The pressure drop h_d is then measured. The device (weighing 8 kg) is extremely sturdy and may be used in a wide field of measurements (of carbon black, sugar, lacquers, sintered carbide production, etc). The accuracy of measurements is about 5%. Duration of a single determination is 20 min. There are 6 figures and 8 references.

[Abstracter's note: Complete translation.]

Card 2/2

S/170/62/005/005/010/015
B104/3102

AUTHORS: Deryagin, B. V., Zakhavayeva, N. N., Andreyev, S. V.
TITLE: The laminar flow of high-molecular liquids and their solutions

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 5, no. 5, 1962, 92 - 95

TEXT: This is a survey of the authors' papers on a method for investigating thin films of liquids flowing on a solid and for studying their properties, devised in the laboratoriya poverkhnostnykh yavleniy IFKh AN SSSR (Laboratory of Surface Effects IFKh AS USSR), (cf. eg. Deryagin et al. DAN SSSR, 4, 101, 1955). There are 2 figures.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR, Moscow (Institute of Physical Chemistry AS USSR, Moscow)

SUBMITTED: August 7, 1961

Card 1/1

13808

8/020/62/147/004/012/027
B117/B186

AUTHORS: Deryagin, B. V., Corresponding Member AS USSR, Talayev, M. V.,
Zakhavayeva, N. N.

TITLE: Experimental study on the filtration of rarefied air through
porous media in the Knudsen and transition regions of pressure

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 4, 1962, 819-821

TEXT: The filtration of rarefied air in a special unit was studied to
confirm the assumption that the gas consumption, as a function of pressure
and concentration, must have a minimum. Substances such as pressed
cotton, glass filters, cardboard etc. with a porosity coefficient
 $\delta = 0.4-0.9$ placed in a cylindrical bulb, were used as filters. After a
vacuum of 10^{-2} mm Hg was reached, evacuation was continued to
 $10^{-3}-10^{-4}$ mm Hg by a steady air flow through the filter. The gas
consumption and pressure were measured. Using very porous substances
($\delta = 0.8-0.9$) and a pressure at which the free path of molecules is of
the same order of magnitude as the diameter of pores, the gas consumption

Card 1/2

Experimental study on the...

S/020/62/147/004/012/027
B117/B186

as a function of pressure showed a minimum that corresponds to the pseudo-molecular flow conditions. In the region of molecular flow, the gas consumption becomes independent of the mean pressure. With less porous substances ($\delta \leq 0.7$), the direction suddenly changes from the horizontal into a rising curve which corresponds to the viscous flow. With very porous substances ($\delta \geq 0.8$) a transition region exists. The curve bends sharply toward the pseudo-molecular flow. After reaching a minimum it again rises linearly and corresponds to a viscous flow. There are 3 figures.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

SUBMITTED: July 19, 1962

Card 2/2

DERYAGIN, B.V., otv. red.; ZAKHARAYEVA, N.N., red.; MARTYHOV, G.A.,
red.; MGROZOVA, L.F., red.; STEPANOVICH, N.N., red.;
BANKVITSER, A.L., red.

[Studies in the field of surface forces] Issledovaniia v
oblasti poverkhnostnykh sil; sbornik dokladov. Moskva,
Nauka, 1964. 362 p. (MIRA 17:10)

1. Konferentsiya po poverkhnostnym silam, Institut fiziche-
skoy khimii Akademii nauk SSSR. 2d, 1962. 2. Chlen-korres-
pondent AN SSSR (for Deryagin).

ZAKHAVAYEVA, N.N.; LOPATINA, A.M.

Percolation phenomena in electrolytes flowing in porous media. Inzh.-
fiz. zhur. 7 no.2:38-42 F '64. (MIRA 17:2)

1. Institut fizicheskoy khimii AN SSSR, Moskva.

ZAKHAVAYEVA, N.N.

Various types of filtration of rarefield air and their practical
use. Inzh. fiz. zhur. 7 no.6:123-128 '64. (MIRA 17:12)

1. Institut fizicheskoy khimii AN SSSR, Moskva.

69658

S/180/60/000/02/014/028

E111/E152

187500

AUTHORS: Zakher, I.M., Maksimova, O.P., Nikonorova, A.I.,
Plemyannikova, I.M., and Yampol'skiy, A.M. (Moscow)

TITLE: Study of the Austenite Stabilization Effect in Phase
Work Hardening

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Metallurgiya i toplivo, 1960, Nr 2, pp 93-103 (USSR)

ABSTRACT: The authors suggest that the important problem of gamma-
phase stabilization should be considered to include the
action of any factor which raises stability without
changing the chemical composition of the austenite
(Refs 1-8). One of these is internal work hardening due
to the martensite transformation itself (Ref 9), which has
been described by Golovchiner and Yu.D. Tyapkin, and by
Golovchiner and Landa (Ref 10). In superinvar alloy
Maksimova and Golovchiner found a "super-stabilization"
effect for austenite with respect to the martensite
transformation in subsequent cooling. In the present work
the aim was to find: the influence of various degrees of
phase work hardening on austenite stability, kinetics of
isothermal transformation and the micro- and submicro-

Card
1/4

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Study of the Austenite Stabilization Effect in Phase Work Hardening

structure of austenite; the rules governing the removal of the effects of this phenomenon during subsequent annealing at gradually increasing temperatures; the changes in martensite transformation kinetics produced by phase work hardening in contrast to those produced by a different sort of effect, e.g. plastic deformation or high-energy particle irradiation. Two types of alloy were used; Fe-Ni-Mn (N23G3) and Fe-Cr-Ni (Kh17N8); their respective compositions being 0.06, 0.05% C; 23.45, 8.40% Ni; 3.30, -% Mn; -, 17.34% Cr. These had been studied widely in connection with austenite stability and fine crystal structure (Refs 5-7, 12). The investigation involved thermomagnetic, X-ray, microstructure and microhardness methods. The experimental conditions chosen in the present work are represented in Fig 1. Phase work hardening was produced by cooling to a low temperature followed by heating in a tin bath to the lowest temperature at which the reverse martensite transition is completed; the heating conditions ensured that a martensite mechanism governed the alpha to gamma ✓

Card
2/4

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Study of the Austenite Stabilization Effect in Phase Work Hardening

transformation. Fig 3 gives the influence of degree of phase work hardening on the martensite transformation on subsequent cooling, while Figs 4 and 5 give for the nickel and the chromium alloys, respectively, isothermal martensite transformation curves for the initial and phase work-hardened states. Figs 6 and 7 give, for the same alloys respectively, the influence of phase work hardening on the starting rate of the isothermal martensite transformation (curves a) and on the overall effect of the transformation. In Fig 8 the influence of annealing temperature on the state of N23G3 subjected to different degrees of phase work hardening is shown, while Fig 9 shows effects for K17N8 alloy subjected to a 40% phase work hardening. Figs 10 and 11 show for the two alloys, respectively, microstructures at different stages of stabilization treatment and the nature of the martensite formed in subsequent cooling. The work showed that for both alloys phase work hardening depresses the "true" martensite point and the temperature range of the transformation, reducing its initial rate; external ✓

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3/4

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E111/E152

Study of the Austenite Stabilization Effect in Phase Work Hardening work hardening has different effects on the two alloys (Ref 7). The observed changes in kinetics (similar to those produced by stabilizing plastic deformation) can be explained by the relatively high temperature required for the reverse martensite transformation, which makes it impossible to retain those changes in austenite fine structure which favour formation of martensite nuclei. Phase work hardening was found to produce extension of structural faults in adjacent austenite zone, decrease in martensite grain size and, to some extent, relative stability of some austenite zones. In general, the changes produced are very stable (disappearing at 1100-1150 °C); their removal on raising the temperature takes place in a stepwise manner. There are 11 figures, 1 table and 15 references, of which 14 are Soviet and 1 is English.

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4/4

SUBMITTED: July 30, 1959

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New data on the problem of the physiological pattern of
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*

ACCESSION NR: AP4031818

S/0247/64/014/002/0311/0317

AUTHOR: Zakhor, Yu. Ya.

TITLE: Conditioned reflexes to relative intensities of acoustic stimuli acting successively on dogs

SOURCE: Zhurnal vysshey nervnoy deyatel'nosti, v. 14, no. 2, 1964, 311-317

TOPIC TAGS: conditioned reflex, acoustic stimulus, relative tone intensity, successive acoustic stimulus, comparative physiology, auditory analyzer, higher nervous activity level, positive conditioned reflex, differentiation

ABSTRACT: The nature of conditioned reflexes to relative acoustic stimuli acting successively was investigated in three adult dogs as part of an extensive comparative physiology study of conditioned reflexes. First, positive conditioned reflexes to pure tones (2000 cps) were developed in the three experimental dogs and then differentiations of the same frequency at different intensities were developed. Reactions to relative tone intensities were tested

Card 1/3

ACCESSION NR: AP4031818

periodically in experiments with tone frequency change, tone intensity change, and tone frequency and tone intensity changes. The experiments were staged in a room (4.7 x 2.5 m) with a retractable feed box in one corner, a rest pad for the experimental dog in the opposite corner, and the experimenter with his apparatus screened off in the third corner. At the sound of the given tone intensities produced by a ZG-11 generator the dog would respond by running to the feed box. Animal reactions were recorded by the experimenter and a kymograph. Findings show that dogs can react to relative tone intensities acting successively. Although the dogs displayed more reactions to absolute tone stimuli than to relative tone intensities, the latter reactions were higher than the reactions of monkeys to relative visual stimuli acting successively. This unexpected finding may be related to the difference in higher nervous activity levels and to the difference in functional characteristics of the visual and auditory analyzers. "The author takes pleasure in expressing his gratitude to E. G. Vatsuro for guidance and valuable advice in carrying out the study." Orig. art. has: 2 figures and 2 tables.

Card 2/3

ACCESSION NR: AP4031818

ASSOCIATION: Laboratoriya sravnitel'noy fiziologii i patologii IEM
AMN SSSR (Comparative Physiology and Pathology Laboratory IEM AMN
SSSR)

SUBMITTED: 25Jun63

ENCL: 00

SUB CODE: IS

NR REF SOV: 010

OTHER: 001

Card

3/3

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(MIRA 18:2)

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(FLUORINE,
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prof., otv. red.; MOSHCENKO, Z.V., red.; GOR'KOVAIA,
Z.P., tekhn. red.

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L 22240-56 EWT(1) RO

ACC NR: AP5025769

SOURCE CODE: UR/0240/65/000/010/0026/0028

AUTHOR: Zakhidov, A. Z.; Atabayev, Sh. T.

32
8

ORG: Uzbek Scientific Research Institute of Sanitation, Hygiene and Occupational Diseases, Tashkent (Uzbekskiy nauchno-issledovatel'skiy institut sanitariy, gigiyeny i profzabolevaniy)

TITLE: Soil and water pollution with agricultural use of toxic chemicals in Uzbekistan

SOURCE: Gigiyena i sanitariya, no. 10, 1965, 26-28

TOPIC TAGS: toxicology, pesticide, soil, water, organic phosphorus compound, chlorine compound, water pollution

ABSTRACT: Chemical pollution of soil and water was investigated in agricultural areas of Uzbekistan where organophosphorus and organochlorine compounds are widely used. Soil samples taken at depths of 0 to 30 cm and 70 to 100 cm and water samples taken from various open water basins were analyzed to determine DDT, hexachloran, and aldrin levels. Findings show that the water and soil in most of these areas are polluted with these toxic organic compounds and in many cases the levels exceed permissible maximum concentrations. DDT, hexachloran,

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Card 1/2

UDC: 614.76+614.77]:632.95 (575.1)

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and aldrin remain stable in the soil for a long time and contaminate crops and underground water sources as they penetrate soil strata. Contaminated crops consumed by man produce acute and chronic poisoning, and the body wastes may serve as a further source of pollution. Cows, goats, and sheep receiving contaminated rations produce milk containing DDT, hexachloran, and aldrin. All these data demonstrate the need for organizing effective sanitation control in these areas and for replacing certain poisonous chemical compounds with less toxic and less stable compounds. Orig. art. has: 1 table.

SUB CODE: 06, 02, 07/ SUBM DATE: 25Mar65/ SOV REF: 002/ OTH REF: 001

Card 2/2 nst